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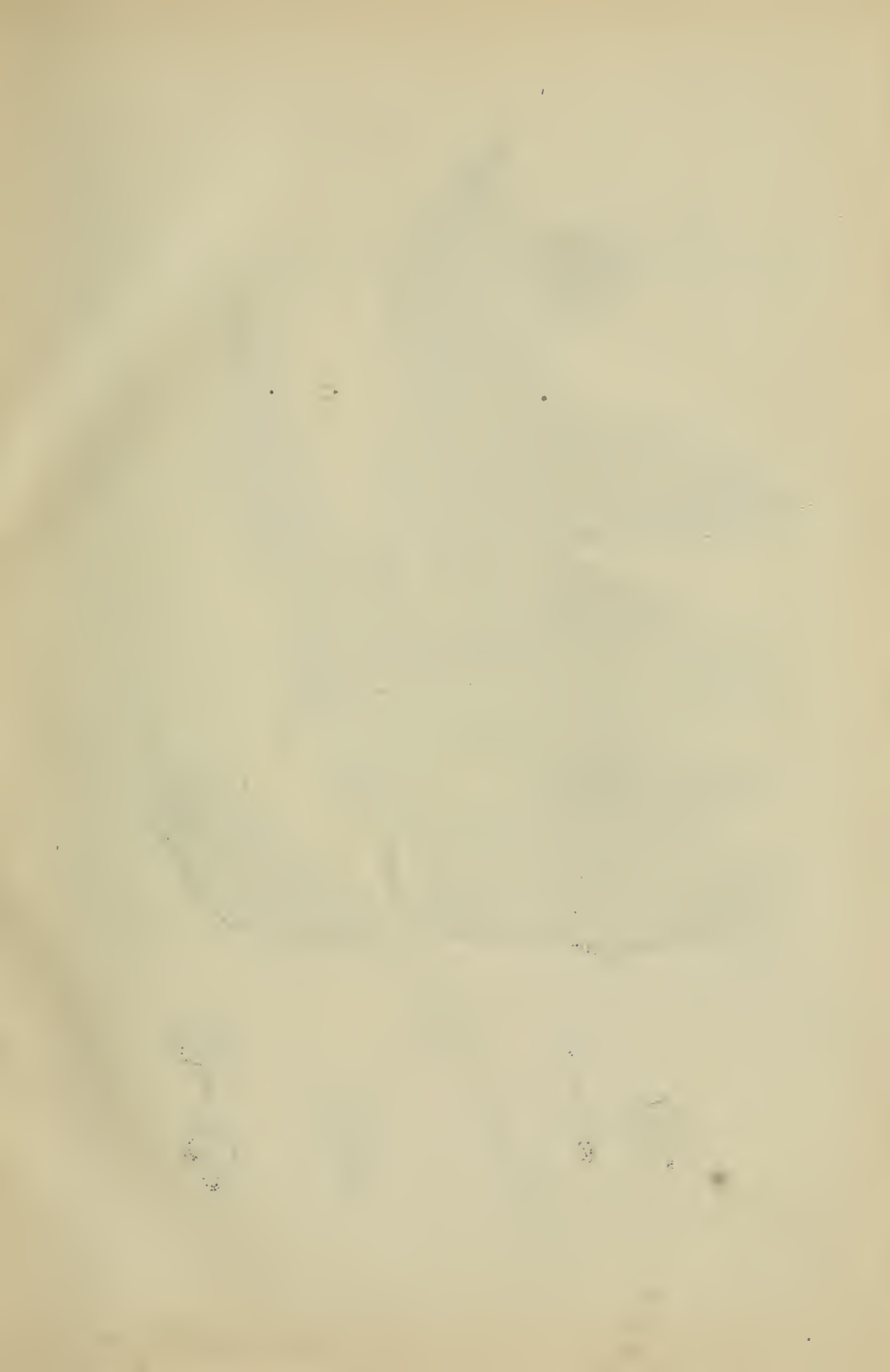






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COFFEE.

THE
Grocers' Hand-Book

AND
DIRECTORY

FOR 1883

COMPILED BY

ARTEMAS WARD, Editor of "The Philadelphia Grocer."

PRICE - - \$2.00.

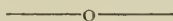


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ARTEMAS WARD,
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THE GROCERS' HAND-BOOK,



In this Annual or Hand-Book no Latin or Botanical terms are used, and no effort is made to do more than give in simple language such information as is generally required by the grocery trade.

We have also avoided in most cases, any attempt to describe the growth of plants or the process of manufacture, preferring to treat of the goods only as they come before the retail grocer. We aim to make our Annual a Hand-Book for the trade, and for that reason have not hesitated to give the names of prominent manufacturers for our readers' convenience, wherever we have deemed it desirable.



ABATTOIR (*Fr., from Abattre, to knock down*). A public slaughter house.

ACARUS, or **MITE**. A class of insects including many species, among which the Cheese Mite, the Flour Mite and the Sugar Mite are common to the trade. Their presence is a sign of decay, and refined or crystalized sugar is free from them. In the raw sugars which are imported by our refiners, Acari are very common and sugar brokers who handle the samples are often much troubled by them, as they bury themselves under the skin and cause an irritation similar to the itch.



ACCOUNTS. Family accounts are generally kept by grocers in pass-books. Care taken before the account is opened, and while it is running will often aid very much in its settlement. In factory districts it is not unusual to obtain written agreements that the account shall be settled regularly on pay-day. Sometimes parties desiring to open accounts are willing to give security to some small amount, or to name references. The latter offer

should always be availed of, as many who would not mind defrauding the grocer will pay rather than have the case reported to those parties whom they gave as reference. To add the account up at least every month and present a bill is very important. To write plainly in the pass-books avoids misunderstandings, and a duplicate A. should invariably be kept in the store.

In suit for an account the grocer should be prepared to furnish a full itemized bill, but if a short note can first be obtained it makes the suit simpler even if it is not paid, as it precludes all question as to the items of the bill. A wife's property is not liable for a bill for food even if she shared in its consumption.

ACCEPTANCE. The agreement to pay a draft at its stipulated date. If a draft is drawn payable several days or months after sight, or after date, and is presented to the party on whom it is drawn, he should (if he proposes to pay it) write across the face "Accepted," and sign his name under that word.

ADULTERATION. The grocer is never an advocate of adulteration. Manufacturers adulterate for the sake of profit, and are generally driven to it unwillingly by the general demand for cheap goods. A fair price is necessary to secure pure goods. The cry about A. goes to great extremes, and no sensible dealer will encourage it. Indeed, a critical and honest investigation always proves that half the accusations of A. are unfounded. The desire to appear critical and the fashionable ambition of being considered a good judge, gives rise to much of it. But milk is found pure in nine cases out of ten, and when at fault is generally robbed of part or all of its cream, an unjust but harmless difference. Mustard is adulterated by Colman and by Keen, and by almost every large manufacturer by the addition of farina—because it is too pungent in its natural state—which is not only harmless but perfectly justifiable.

Again, many of the statements with regard to A. are rendered alarming by the misuse of chemical terms—to say that Clover Honey Syrup is made of glucose, is to state a mystery—to say that it was made of corn-starch and sulphuric acid would cause alarm—yet the corn-starch which we use to make delicate dishes

for the sick is made by treating corn with hydrochloric acid. If, as modern medicine asserts, a state of dread affords a direct opening to disease, then the alarmists are as dangerous as the A., and it would seem preferable to live in ignorance rather than be frightened out of the world by too critical inquiries as to what we eat or drink.

Of course much A. exists which is deleterious to health, but as a rule it exists where it is least expected and rarely detected. Laws of the most stringent character against A. exist in Great Britain, and are made very oppressive on the retail grocers, many of whom purchase goods the purity of which they are unable to determine. Under each article in this Manual separate A's are mentioned.

AERATED BREAD. In ordinary bread yeast is added to free the carbonic acid contained in the flour. When the bread is put in the oven the bubbles of carbonic acid gas expand, making light, spongy bread. In making aerated bread, the gas bubbles are obtained by sprinkling the flour with prepared carbonic acid water and then working it up in a strong enclosed iron box by machinery for about ten minutes, then putting it directly into the oven, thus making bread more cheaply and quickly, and producing purer bread. One objection raised in the trade against this bread is that owing to its firm crust it does not show its staleness and when taken away by the bakers is often returned again to the injury of the grocer, whose customers find the bread stale.

ALBUMEN. A thick viscious substance found in animal matter. The white of an egg is almost pure albumen. In vegetables, such as corn and wheat, the *albumen* is the floury part, in cocoa nuts the fleshy part, etc.

ALCOHOL, or *SPIRITS OF WINE* has its source in the fermentation of sugar, whether in the starch of plants or vegetables, or otherwise. Brandy and Whisky contain about one-half Alcohol. Proof Spirit contains slightly more. Rectified Spirits are about 50 per cent above proof. It cannot be bought nearer purity than 90 per cent., or a proportion of 10 per cent. of water. Pure alcohol is colorless. It is highly inflammable and quantities of it in a

store render extra insurance necessary. It cannot be sold without a license which costs \$25.00 per annum for retailers and \$200. for wholesalers. The Internal Revenue tax is 90c per gal.

ALDEN DRIED FRUIT; dried by the Alden process of evaporation. The water is so quickly extracted from the sliced fruit by hot air blasts that the original flavor is retained, and Alden fruit commands the highest prices. Vegetables are also prepared in this manner and a bushel of potatoes weighing 60 lbs is reduced when dessicated, to $4\frac{1}{2}$ lbs.

ALE—a kind of beer—contains from 6 to 8 per cent of alcohol while ordinary beer has only one to two per cent. Scotch ales have less hops than other brewings. Ale when bottled undergoes a second stage of fermentation, and for a week or two is said to be "sick" by bottlers, after which time it becomes fit to uncork. It should be kept in a cool place, and laid on its side. In opening it should be handled gently as shaking up the sediment in the bottle clouds the ale, and it should be poured out steadily and without stopping, for the same reason. Great skill is acquired in handling ale and the same brewing tapped and drawn by different persons varies very much.

ALLSPICE, also called *Pimento* and *Jamaica Pepper*, is the dried fruit of a small West Indian tree called the Pimento. The fruit is about the size of a pepper, or small pea, and is gathered when green. Is called Allspice from a supposed resemblance in flavor to a mixture of cinnamon, nutmeg and cloves. It is rarely adulterated on account of its cheapness.

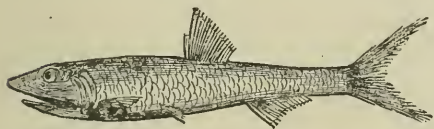
ALMONDS.—Divided into sweet almonds and bitter almonds. Of the sweet almonds there are several varieties—the most common are the *Jordan*, the *Valencia*, and the *Brittled-shelled*. Of these the first named variety is usually most highly esteemed. They are eaten as a dessert and are employed in making confectionery.

The bitter almonds are used for flavoring, especially in the form of oil of almonds. The kernels of peachstones are sometimes used as a substitute for bitter almonds, and answer very well. They ripen in August and September, and are shipped in October.

ALUM. Sometimes used by bakers to whiten their bread. The Alum used in Baking Powders is Burnt A.—a white spongy substance produced by heating alum until it melts and then driving off all the moisture by additional roasting. Its use in Baking Powders has been much abused by parties interested in other preparations, but if completely neutralized it is harmless. The taste test is a poor one, as no raw Baking P. tastes pleasantly, and an overdose of cream of tartar would be about as bad as one of burnt alum.

AMMONIA, is a gas and its ordinary form of Spirits of Ammonia, or Hartshorn, is water saturated with the gas. Ammonia is sometimes used in Baking Powders, but being extremely volatile must soon lose its strength.

ANCHOVIES. A small fish, about 6 in. long, and somewhat thicker than a sardine, which is extensively used in making pastes and sauces. Sardines are sometimes sold as anchovies. Anchovies should be chosen small, fresh pickled, white on the outside and red in. The true A. has a round back.



ANISE-SEED. Is used as a seasoning for food and in the preparation of liquors. From Anise-seed is obtained *Oil of Anise* which is used for the same purposes as Anise-seed.

ANNOTO, OR ANNATO. A red dyeing drug used in coloring butter and cheese. It does not affect their quality and is used in the creameries or factories instead of the yolk of an egg, which is often added in the farm dairy to give butter the rich color demanded by the consumer. It is often used to color chocolates.

ANNEAR'S SAUCE. A leading brand of table sauce, manufactured by John Annear & Co., of Phila.,—formerly known as Penna. Sauce.

APPLES. This well known fruit has been much improved by cultivation from its original wild state, which is still seen in the *crab apple*. This is a small, almost uneatable, acid fruit, and yet it is the parent of the almost innumerable varieties now used in

such various ways, in cooking, in preserving, in making jellies and in desserts, as well as for making cider and vinegar—(which see)

The different varieties vary in taste and appearance, and also in their time of ripening. The *Harvest* or *June* apple, a small, yellow sweetish apple, is the first to make its appearance, ushering in what are commonly called the summer apples. Of these the leading varieties are the *Highglow*, a very handsome, fine-flavored apple, the *Sourbough* and the *Gravenstine*. These are followed by the Fall apples, the best of which are the *Maiden Blush*, the *Belle-flower*, the *Holland Pippin*, of which there are several sub varieties, the *Fall Pippin* and the *Strawberry Pippin*. Of these, the first two are generally the most popular. Of the winter apples, the leading varieties are the *Greening*, the *Baldwin*, the *Northern Spy*, *Spitzenberg*, *Seek-no-further*, *Gill Flower*, or *Sheeps-nose*, the *Swaar* and the *Russet*. Of the *Greenings*, more are sold than of any other winter apple, it being the general family apple, used alike for eating, cooking and preserving. The *Baldwins* are a comparatively inferior apple, of a dry, insipid flavor, but they are largely bought because they are a sound, good looking apple, frequently presenting a better appearance than really superior apples. The *Northern Spy* and *Spitzenberg* are very finely flavored and are two of the best of our winter apples for eating purposes. The *Gill Flower*, commonly called the *Sheeps-nose*, from its peculiar pointed shape, has a pleasant, sweetish flavor. The *Russet* is the latest comer and the hardiest of our apples and is usually kept till the other varieties are beginning to disappear. The *Newtown* or *Golden Pippin* is now raised chiefly for export to Europe, where it is much esteemed.

APRICOT. Ripens in July, and in appearance is very similar to a small yellow peach. Canned Apricots are brought to our markets from California.

ARGOL, is Cream of Tartar (which see) in its natural state before being refined. It is held in solution in the juice of grapes, but it is not soluble in alcoholic fluids so that when alcohol is formed during the fermentation of wine it precipitates the argol. In wines bottled before they are fully ripe, the argol is precipi-

tated on the side of the bottle in a sort of crust, thus forming what are called *crusted wines*.

ARROW-ROOT. A starch obtained from the root of a West Indian plant. The name is said to have been obtained from the fact that the Indians used the fresh roots to cure the wounds made by poisoned arrows. More probably, however, the name is derived from *Ara*, the old Indian name of the plant. It is used as a simple food for invalids and children, usually simply dissolved in boiling water and flavored to suit the taste. Potato-starch, which is largely used to adulterate arrow-root, is sometimes sold as *English arrow-root*. Maranta, canna, and Curcuma are the best qualities.

ARTICHOKE, as it appears in the market, is the fleshy part of the flower of the artichoke plant, taken before the flower expands. In this country it is usually boiled before eating but in Europe it is frequently eaten raw with pepper and salt. The *Jerusalem A.* (which see) is an totally different plant.

ASHES (WOOD) are used in the country for preparing lye and making soap. When mixed in water their alkaline salts are imbibed by it, and a strong lye is formed. Country soap is made with it but Concentrated Lye and Potash are now generally used on account of their cheapness and convenience.

ASPARAGUS. A native of Europe, growing in rich, sandy soil, in meadows and along the banks of rivers. It has been much improved by cultivation, in its wild state growing only about a foot high, and as thick as a goosequill. In its cultivated state, it attains a height of 3 to 4 feet. The plant, when it is only a few days old, is cut as it sprouts from the ground, tied in bunches and brought to the market. It was a favorite vegetable of the ancient Romans. The seeds have been used for coffee, and are recommended for that purpose in Europe at the present day. A kind of fermented spirit is made from the berries.

ASSETS. The whole available property of a merchant or firm. In computing the assets in a store a great mistake is made when everything in stock is put down at its original price. The available value is rarely more than what the goods would bring at auction.

ASSIGNMENT. Since the repeal of the Bankrupt Law any body can assign his property to any one else, to whom he owes money. The result of this state of affairs is that insolvents assign their property to their relatives, to protect them, and leave their general creditors without anything.

ASSOCIATION. A union of persons in a society for some particular purpose. Grocer's A. have existed in England for many years, the Grocer's Company dating back for centuries. In this country they were first started in 1881, in Boston, through the efforts of the New England Grocer, and in Philadelphia by similar efforts on the part of The Phila. Grocer. Other cities rapidly followed and the retail trade has already secured many reforms by means of united action. Such associations can be organized even in small towns, and will be much aided in their usefulness by dividing the work, and appointing several standing committees at the outset.

AUCTION. Goods sold at public outcry and knocked down to the highest bidder. Auctioneers pay a high license fee and it is illegal to sell goods at auction for others without such license. In Philadelphia, the sale of imported fruits and groceries is mainly done by Samuel C. Cook, and the sale of stores and stocks of groceries by Wm. F. Comly & Co. The commission charged depends upon the amount of the sale &c.

A VOIR DU POIS. The system of weights used for weighing everything except medicines, precious stones and precious metals. (See Tables of Weights and Measures). The name is derived from the French words *avoir du pois*, meaning, *To have a fixed measure*.

AWNINGS. Are made usually from sail duck canvass varying in price and durability, according to the heaviness of the canvass, Permanent awnings are often put up of corrugated iron but the best qualities of canvass awning ought to last very nearly as long as the iron ones. The practice of whitewashing the awning in order to prevent mildew, is a useless waste of time and money, for although it does prevent mildew, at the same time the lime in the whitewash eats the cloth, rendering it brittle and rotten. "Earellizing" is a patent process rapidly coming into general use

which, at a cost of only about six cents a yard, effectually prevents mildewing but leaves the cloth firm and elastic. There are several ways of applying the process.

AXLE-GREASE. Used for lubricating axles. The basis of the different brands is a compound of fatty oils to which is added tar or graphite to increase the durability of the grease and give it a better surface. Of the class employing tar in their manufacture, a very superior article is Frazer's axle-grease, while of those which employ graphite, the best is that prepared by the Dixon Crucible Works, of Jersey City, N. J.

BACON. (*See Pork.*)

BACON BEETLE. (*See Dermestes.*)

BAGASSE, CANE STRAW Or CANE TRASH, is the refuse left after extracting the syrup from the sugar cane. Used as fuel in the sugar manufactories.

BAGS. Formerly the making of paper bags was one of the duties of the grocer's assistants, but now they are made so cheaply by machinery that patent bags have gone into general use. Many manufacturers desirous of advertising their wares, print paper bags and supply them to the trade at nominal prices, or give them with every sale of their own goods. But every good grocer can better afford to advertise his own store in that way, than make the trifling saving. *Satchel-bottom* bags open out square at the bottom and are a decided improvement on the old form. The "Union Champion" square bags of Phila. are the best form made.

BAKING POWDERS. A compound used in place of yeast in which an acid acting upon an alkali generates carbonic acid gas. This action takes place as soon as the powder is moistened, and the baking can be done more promptly than when yeast is used. The standard powders are generally made from cream of tartar and carbonate of soda. Rumford's well known article is a phosphate. Burnt alum is used by some makers, and if thoroughly neutralized is not injurious, although it has been widely attacked by interested parties. The Patapsco is the leading powder of this class. Cheap powders should be avoided by the grocer, as they

contain too large a proportion of starch or flour, and involve more loss by spoiling the baking than they save in cost, while a double quantity is generally required. Care should be taken of *all* powders, as they lose strength if exposed to dampness or the air.

BANANA. This noble plant is a native of the East Indies but now cultivated in all warm countries. It is the most prolific vegetable known. Thirty to forty plants will grow in a space of forty feet square. It is a kind of palm which reaches 15 to 20 feet in height with a cluster of leaves spreading out at the top, each leaf being about six feet long by two feet wide. The flowers are pink, an immense and drooping spike of them appearing in May and June among the leaves. The upper flowers die unproductive; the lower ones rapidly change into oblong-shaped fruit, some bunches containing as high as 160, each as large as a cucumber and resembling it in color and shape. This fruit is filled with a sweet nutritious custard-like juice, and is eaten raw, boiled, baked and cooked in various ways. It is preserved with sugar, and with vinegar; is used as bread; and when pressed and fermented yields a spirituous drink resembling cider. The sap also makes an excellent wine. In truth this fruit and the plantain which it closely resembles are amongst the richest gifts of Providence to the inhabitants of the tropical countries. It needs very little cultivation: all that is necessary being to remove any suckers the old trees throw up, and plant them at requisite distance. They then grow rapidly, bear fruit in ten or eleven months, and afterwards continue to yield a fresh crop every six months for many years, which without care except the loosing of earth around the roots once every season. Bananas are round, yellower and of more agreeable flavor than the plantain. They are generally brought to our markets in a partly green state and ripened in dark well heated rooms. They are easily frozen and in cold weather are packed very carefully before shipping but are always sent at the risk of the party ordering. Warner and Merritt of Philadelphia are headquarters of the U. S. for this fruit. See full page cut of the Banana plant and fruit.

BANKING. Every dealer should keep a bank account.



BANANA.

The money is safer, not so carelessly expended, and the checks by which it is paid out stand as vouchers and receipts.

Drafts drawn without authority to do so, can be refused without damage even though they are protested, although it is wise to pay them, when for correct amounts, if possible.

Exchange is charged by city banks on country checks and is a just item if charged to the retailer by the wholesaler

Notes are due on the third day after their stipulated expiration, and should be paid before three o'clock; if paid to the notary who calls later, his charge should be fifty cents; if protested, his charge is usually \$2.00.

Notices of Notes. The Bank is not obliged to notify with regard to date when a note falls due, but generally does it out of courtesy. When the maker makes the note payable at a special bank, he is not notified of the date, nor of the protest until the following day.

BANKRUPTCY. (See Assignment) A general effort in favor of a new National Bankrupt law is being made, it being evident that while the Bankrupt act which was repealed was a very faulty one, the country needs some plan by which the debts of an insolvent may be proportionately paid out of his remaining assets.

BARLEY. This grain seems to have been extensively cultivated from the most remote antiquity. It is mentioned in the books of Moses, also by Greek and Roman writers. Beer made from it was known to the Greeks, Egyptians and ancient Germans. Barley meal is used for bread in the northern part of Europe, but elsewhere barley is principally used in brewing beer.

Pot Barley or starch barley is prepared by simply removing the outer husk.

Pearl Barley is prepared by removing both the outer and inner husks and rounding and polishing the seed.

Patent Barley is a flour obtained by grinding pearl barley and has not the acrid taste which is retained in the barley meal by grinning the seed with its husks.

Barley Sugar is a confection formed by a mixture of sugar and a decoction of barley.

BARLOW'S BLUE. (See *Blue Sifting*).

BARREL. (See *table of Weights and Measures*.) A barrel of flour should contain 196 lbs; pork or beef 200 lbs. (The standard of pork has been reduced to 190 lbs.); pickled beef 306 lbs; hams, in barrels, 226 lbs; butter 224 lbs; soft soap 256 lbs; wine or liquids $32\frac{1}{2}$ gallons; tar $26\frac{1}{4}$ gallons.

BARROW. (Or *Push-cart*). A small carriage moved by hand. In purchasing care should be taken that the load balances evenly on the axle and they should be kept well painted and under cover. Jacob Reeh, 8th and Girard ave., Phila., is a leading manufacturer.

BARTER. Dealing by an exchange of goods. This was the original mode of dealing before the use of money and is still very common wherever money and banking facilities are scarce. Country dealers are often obliged to take eggs, butter, etc., as pay for sugar, starch and soap, and when they can move the produce quickly and well, and are not paying too much for it, the barter seems to have a double profit, because they make something on the sale of the groceries and something on the sale of the produce. But it is often a great snare because of the following reasons: First, the produce may move slowly and so tie up capital, deteriorate in quality and demand much time and attention. Second: the feeling that there is a double profit in barter, leads dealers to pay the fullest price for goods taken in trade, relying on the grocery profit alone. But there is really no double profit. For keeping, handling, and selling groceries, one profit is realized: for receiving, shipping and selling the produce, another profit *should* be earned, and the dealer who does both for a single profit, is doing half his work for nothing. Third, it requires a good deal of sense to make a successful grocer, and many men who try to combine the business of buying and shipping produce, and its freights, account sales, drafts, returns and commissions, with that of keeping a grocery store, find out that they are not masters of both, but that one of them eats up all the profits of the other. Barter leads to a competition in buying which is worse than that which "cuts" in selling, because the dealer who

cuts the prices of his groceries, generally stops before he gets to cost, because he knows just where that point comes, but the buyer who competes on produce does not know the price at which the goods will sell in the city and is often and easily led to pay more than he can realize after all the charges are paid. No dealer can do two transactions for one profit; few are capable of managing a double business, and when goods are sold below their value or bought above it, it is well to let others control the market.

BATH BRICK. A fine grained brick used in cleaning knives. It is said to be the only article kept by some drug-houses which they do not adulterate.

BAY RUM. A liquor obtained by distilling the leaves of the Bay-tree. Used as a perfume and tonic for the hair. Generally imported from the West Indies.

BEANS form a very popular vegetable while fresh, especially the Lima Bean. They are also extensively dried, in which state they may be kept almost indefinitely. When gathered before the bean is ripe, to be eaten pod and all, they are known as *String Beans*. For this purpose the *Wax Bean* is usually preferred.

Lima and String beans are canned in large quantities and the former, after drying, are often soaked in water and sold in that state in our winter markets as fresh beans.

BEE BREAD, is a mixture of honey and pollen, prepared by the bees as food for the larvae, which is sometimes found in honey, in the shape of bitter black wax.

BEEF. (*See Meats*).

BEER. Ordinary lager beer is now delivered by the brewers and bottlers, (who take the risk of the bottles), at such low figures as to preclude any advantage in handling to the retailer. Lamber's Bohemian Beer is however ordered by many families, in town and out, through their grocers.

BEESWAX, is obtained by pressing the honey from the honey-comb, then melting the residuum (mixed with water) and straining it through hair-bags. It is bleached by being spread in thin sheets in the sunlight. It is used in the making of candles

and tapers. It is often adulterated with paraffine and spermaceti.

BEET. Cultivated chiefly for the sake of its roots, which are used as food by both man and beast. The leaves also, especially of a variety called the *White Beet*, are used as a vegetable in the same manner as spinach. In Europe sugar is extracted from the root to a large extent, and also to some extent in this country, under the name of *Beet Root Sugar*. It is similar to the sugar obtained from the sugar cane but is inferior in its sweetening power. *Mangold Wurzel* is a large, coarse variety of beet used as cattle feed. Beets mature about June 1st.

BENZINE. A light oil of petroleum. Is used for the removal of grease spots, etc., from wood and clothes. It removes the spot by dissolving the grease or fatty substance. It will also dissolve caoutchouc, gutta-percha, wax, camphor, etc. It is very inflammable, and a special insurance should be secured when any quantity exceeding five gallons is kept on the premises.

BIRCH BEER. A beverage obtained by fermentation of the sap of the birch-tree.

BITTERS. A class of disguised liquors which avoid the license laws by coming under the head of proprietary medicines. They are too various to describe, being based on all kinds of spirits and bitter barks. Some are even made from orange peel, bark, deodorized alcohol and water. Strongly recommended for malarial fever, they contain nothing which can prevent them except the bark which can be procured from any druggist in a dry state, and taken by merely soaking in water, while, if liquor is needed, a purer quality than that used in Bitters can easily be obtained.

BLACKING. The principal ingredients are bone black, oil, molasses and a little sulphuric acid. There is also a higher grade of blacking in which wax is used instead of molasses. This produces a softer and more durable polish and excludes moisture better than the ordinary blacking.

BLACKBERRY. This well known fruit is sold in large quantities in the early summer markets. It is made into jelly and jam, and from it is made blackberry cordial, a pleasant astringent wine. The fruit grows on a bushy bramble all through our

woods and fields and is much improved by cultivation.

The *Dewberry* is a fruit of the same species, but rather smaller, rounder, and more juicy. It grows on a low, creeping bramble, and ripens several weeks before the blackberry.

Blackberry Brandy is the boiled juice of the fruit with sufficient brandy added to it to prevent fermentation. It is much used in summer complaints.

BLUEING. Used in washing clothes to avoid their yellowish tint and give a whiter appearance. Indigo is the original form, but Prussian blue dissolved in water by means of oxalic acid is generally used in manufacturing liquid blue. Spanish Float Indigo is a high grade of indigo in lumps. B. comes before the trade in many forms, which have grown still more numerous since the discovery of aniline dyes, which are largely used for the same purposes. Liquid blue is very apt to freeze and should be kept in a warm place, or the bursting bottles may entail great damage to other articles in stock. Barlow's Blue, manufactured by D. S. Wiltberger, of Phila., is a well-known article.

BLOATERS. A kind of fat herring.

BOLOGNA SAUSAGE. (Named from the town of Bologna in Italy). Is properly made of Bacon, Veal and Pork suet chopped fine and enclosed in a skin. The common imitations made in this country are made without a suspicion of veal and consist mainly of tough beef taken from cattle which are too thin to cut up for market.

BONDS OF SURETY. Business cannot be done on too careful a basis, and many difficulties may be avoided by requiring Bonds of S. from Cashiers, Book-keepers and Managers. (See business forms in Appendix).

BORAX. Formerly brought from Thibet, Persia, and India; but now the large deposits in south-eastern California and Nevada are the chief sources of our supply.



The important practical uses to which borax is put are almost innumerable. It is used in soldering, as it dissolves any oxide that may be on the surface of iron, thus presenting a clean surface which enables the solder to take

effect; it is used as a substitute for, and in the manufacture of soap; it replaces washing soda in the kitchen; is used as a preservative agent for butter and other materials; is the chief element in shampoo liquids for cleansing the hair and is destructive to ants, moths, cockroaches and other vermin.

BORAX SOAP. A soap which contains Borax as a prominent ingredient. The popularity of certain well-known brands have caused many imitations to appear, some of which are merely white soaps with sufficient borax to justify the title. Dreydoppel's Borax Soap is probably the oldest and best known in the United States, dating back to 1867.

BORECOLE. (*See Kale*) Differs from Cabbage in the open heads of leaves, and is more tender and delicate. The more the leaves are curled the higher it is esteemed.

BRANDY. A liquor obtained by distilling the fermented juice of the grape. Very little Brandy is made from pure grape juice, most of it being distilled from other wines. The best is that distilled in Cognac, a district in the west of France, from the choicest wines; but very little of that sold under the name of *Cognac* comes from this district. When first distilled, Brandy is clear and colorless, and if put directly into glass vessels will remain so, but when placed in wooden casks, it acquires a light sherry tint, which is often deepened by dealers, who add burnt sugar or other coloring matter.

BROWN. A preparation of meat made from the head and belly-piece of a young pig, with the addition of ox feet to make it gelatinous. It has long been a well known dish in England, and has come into use in this country as a new article in canned meats.

BRAZIL NUTS grow on large trees in Brazil and Guiana, a number of them growing in a sort of a seed vessel, as large as a man's head and so hard that a blow from a sledge hammer is required to break it. The seeds, popularly called nuts, are wrinkled and triangular, with a hard shell and pure white kernel of a very agreeable taste. They yield a large quantity of oil, which is used in South America for illuminating purposes. They are also called



BRAZIL NUT.
(Showing leaf, fruit, and section containing the nut.)

Cream nuts and Para nuts. See full page illustration, showing the nut in its natural covering.

BREAD. Made from wheat flour, it forms the chief article of food throughout the civilized world. There is also the *rye bread*, which is darker and coarser than wheat bread; *corn bread*, chiefly used in the southern part of the United States, where it forms the principal food of the negroes and of which a common form is the *hoe cake*, familiar in stories of plantation and army life; *Graham bread*, which in England and sometimes in this country is called *Brown Bread*, and is made from unbolted wheat flour, and *American* or *Boston Brown Bread*, made from a mixture of crushed rye, molasses and other ingredients, forming a coarse, dark brown bread. See also Aerated bread.

BRETZEL. Frequently misspelt Pretzel, is a hard, brittle roll of bread twisted into a letter B, and common in Germany and among Germans in this country, who eat them with their beer.



BRICK TEA. A term applied to tea shaped by heavy pressure into cakes which are divided by indented lines into small, easily separated squares. The Tea expands when put into boiling water. It is claimed that tea in this form besides being in compact shape for shipping and handling preserves its aroma much better than in the ordinary form. It has been but recently introduced into this market and has failed to obtain popularity because of the facility with which it could be adulterated.

BRIMSTONE. See *Sulphur*.

BRINE. A term applied to water highly impregnated with common salt, and used to preserve meats, butter, etc. Salt should be added to the water until it will not dissolve any more.

BROCCOLI. One of the varieties of the common cabbage which has been produced by cultivation. It is very similar to the Cauliflower, but more highly colored and also more hardy, which characteristic gives it its chief importance, as it can be obtained at seasons when there is no cauliflower in the open field.

BROMA. A chocolate preparation made from the beans of the cocoa.

BROOMS. Are generally made of broom-corn, a species of sorghum which originated in Africa. The seeds are combed out by machinery. The handles vary, from the cheapest to the most expensive woods. For their quality, brooms depend not alone upon their material, but upon the way they are put together. They should be securely fastened and wrapped with from two to six ties of twine or wire—the more the better. The corn should be clean and tough. A broom has been lately patented which has a detached handle, which affords great facility in packing and shipping.

Broom Racks are patent frames for displaying brooms in the store and are more convenient than the old-fashioned mode of boring a barrel head.

BLACK STRAP. Dark sugar-house molasses.

BRUSSELS SPROUTS is one of the numerous varieties of the cabbage plant, distinguished by producing little clusters of leaves, which close together and form miniature cabbages. These are used the same way as the ordinary cabbage, but are more delicate and are very highly esteemed. In season from September to January.

BUCKWHEAT. The plant is a hardy one and well adapted to a rigorous climate. The grain is of a sort of a triangular shape and produces a dark flour of a rather rank, bitter taste, which is much used for baking batter cakes in cold weather. The demand springs up very quickly with the first frosts and ends with the approach of warm weather in the Spring. It is mixed with middlings to reduce the strong taste of the Buckwheat, to make the dough lighter and sweeter and to make the cakes brown more readily on the griddle. *Self-raising* Buckwheat is put up by Geo. V. Hecker & Co., of New York, the words "self-raising" being their trade-mark. It is the best known and oldest brand in the country.

BUSHEL, A measure containing 4 pecks, or 32 quarts. The legal bushel of the United States contains 2150.42 cubic inches of

distilled water, weighing about $77\frac{1}{2}$ lbs. The legal measure of various articles of merchandise is determined by weight. See tables of weights and measures.

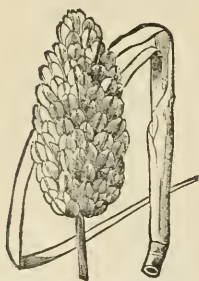
BUTTER. Used by the Hebrews as a food, but by the Greeks and Romans only as an ointment and even to this day rarely used in the countries along the Mediterranean, being sold chiefly by apothecaries. The factory system of cheese making and its outgrowth, the creamery system of butter making, have greatly improved the quality of the butter made in the U. S. It is a very sensitive article and absorbs any odor or flavor with which it comes in contact, and must be kept in a cool, dry chamber, where it will be free from such damage. If the butter is churned too quickly it becomes soft and frothy—if churned too long its flavor is impaired. The taste and smell of rancid butter is due to Butyric Acid which forms as it becomes old. To keep butter sweet it is desirable to put it under brine in stone jars or firkins, or to shake the original package so as to loosen the butter from its sides and work some brine down and around the whole mass.

Artificial Butter, see Oleomargarine.

CABBAGE. This plant has been made to assume, through cultivation, several seemingly distinct forms, differing not only in appearance, but even in qualities, viz: the cauliflower, kale, brocoli and brussels sprouts, (which see under their respective heads). Of the common cabbage there are numerous varieties, differing but slightly and generally grouped in two classes, the *early* and *late* cabbage, according to their time of ripening. Large quantities are consumed by Germans as *Sauer-kraut*, (which see). The solid part of the cabbage head is often cut into long shreds, and eaten raw, with seasoning or mustard dressing, as “cold slaw.” Red cabbage is much used for pickling.

CADDY. A small chest or box for keeping tea. Many grocers re-pack their teas in such caddies, which are made in various small sizes in imitation of Chinese chests and shipped in nests (one inside the other).

CANARY SEED. The seed of the canary grass, which grows in the Canary Isles and has been naturalized in Europe and Great Britain. The seed is used as food for birds. It is largely mixed with rape and other seed to cheapen it, but the unadulterated article is much preferable. It must be kept away from vermin. A fine flour is made from this seed which is employed as dressing in fine cotton goods and for finishing of silken stuffs.



CANDLES Before the introduction of gas into common use were the common household lights. They are still used largely because they are the safest and most convenient form of portable light. They are made of tallow, paraffine, wax and spermaceti, and are sometimes colored with aniline dyes. The tallow candles are the most common form, as they are more easily and cheaply made, but they burn away so much more rapidly than other forms of candles are really less expensive. Adamantine candles are made of tallow from which the glycerine has been extracted by chemical processes, leaving only pure stearine. These are very excellent and popular candles. Paraffine has, of late, been largely used. It makes a clear candle, resembling wax and gives a very good, pleasant light. A little stearine is usually added, as the pure paraffine is apt to bend or droop when warm.

Spermaceti candles are made from spermaceti which is formed in the cavities of the head of the sperm whale. *Wax candles* are more expensive, but not much better than other grades of candles.

Hotel candles are merely ordinary candles of about half the usual size.

CANDY. (*See Confectionery*).

CANNED GOODS. The preservation of fruits and vegetables by hermetically sealing them, is not a new process, but its great development into a separate industry, is comparatively recent. During the Mexican war, it received its first start as a business in the U. S., and during the rebellion it rapidly developed into a leading industry. To-day the list of articles which are

preserved by canning are almost countless, and includes fish, meats, poultry, chowders, plum puddings, sauces, etc. Custom has done away with most of the prejudice arising from fear of poisoning, but there is great room for care in the canning of acid fruits or vegetables. Some goods are now packed in tin cans coated with paraffine wax, and the custom of soldering on the outside only, is very general. Most articles when properly canned, are kept in as good condition as when fresh, and in the case of Lobster and Crab meat which is tinned a few minutes after it is taken from the sea, the advantage is directly on the side of the canned article, as the lobsters and crabs which are carried to the cities and crawl around in the sun for hours, are generally half dead before they reach the consumer, while the tinned meat is firm and fresh. The immense consumption of canned salmon all over the world, shows how well fish can be packed.

Canned soups are now put up by many of the prominent packers and those of J. W. Huckins & Co., Boston, enjoy an excellent reputation.

The canning of shrimps is a very delicate process but it has been brought to perfection by G. W. Dunbar's Sons, of New Orleans, whose brand of Barataria shrimps is much esteemed.

The New England dish of baked beans is now very extensively canned.

Brawn (which see) has been quite generally introduced to the trade, and has met with considerable sale to saloon-keepers.

The multitude of packers and the great variation in the quality of the goods packed, have caused a very general demand for a guarantee of one year on all canned goods. The subject has been stoutly agitated by the *St. Louis Grocer* and by the whole grocery press and the best packers in the country have agreed to guarantee their goods. Defective canned goods are known as

Swells, which on account of their growing frequency of occurrence are becoming a matter of grave importance to those who handle canned goods, and we would warn grocers when they are making purchases not to omit to demand guarantees against the goods becoming unsound. The swells are usually caused by im-

perfect cooking of the fruit in packing, so that the oxygen is not entirely expelled. Sometimes, also they are caused by an almost imperceptible leak in the can which admits the oxygen. Whenever the grocer finds a swelled one among his cans, he should take it for granted that it is unsound and return it at once to the wholesaler — without opening — who in his turn can, in the same way, demand a rebate from the packer.

CAPERS. Are flower-buds of the *caper bush*, which grows in countries along the Mediterranean Sea. They are put up as pickles, the smaller and better ones being packed in bottles and the coarser ones in casks, and are extensively used as an ingredient of sauces, etc. for boiled meats. The buds of one or two plants are sometimes substituted for capers. Copper is sometimes added to improve their color although it renders them poisonous. Its presence may be detected by inserting a polished iron rod, the surface of the rod becoming coated with copper if it is present.

CARAMELS. A species of chocolate candy which is soft when fresh but soon hardens. They are very nicely put up for the trade in tin boxes.

CAROB BEANS. (*See St John's Bread.*)

CARAWAY SEED. The seeds of the caraway plant. They are highly aromatic, are used as flavoring in cooking and confectionery and are used in the preparation of perfume and scented soaps.

CARROT. The root of this plant is used to some extent in soups and stews, and is also boiled and eaten as a vegetable. The juice is sometimes employed on the farm to give color to butter.

CASSAVA or MANDIOC. (*See Tapioca*)

CASSIA BARK. Sometimes called *China Cinnamon*, is a bark very similar to cinnamon, both in appearance and quality but comes in thick pieces and less closely quilled, and is less sweet and delicate in flavor. As it is cheaper than cinnamon, (which see) it is largely used in the place of it, and is also used to adulterate it.

CASSIA BUDS are the dried flower-buds of the same trees which yields Cassia Bark. In appearance they resemble cloves, their flavor being similar to that of the bark.

CASTILE SOAP. (*See Soap.*)

CATSUP. Properly the juice which exudes freely from salted mushrooms, afterwards boiled in spice: but made from tomatoes, green walnuts, and other fruits by boiling them till soft, passing them through a fine sieve and seasoning them highly — is one of the most popular sauces of our markets. It is sold either bottled or in bulk.

CAULIFLOWER A variety of the common cabbage of which the leaves are not the part eaten as in the other varieties of cabbage, but the flower buds and their stalks, which have been deformed by cultivation into a compact mass or head. They make an excellent pickle and are extensively used in this form.

CAVIARE. The pressed and salted roes of the sturgeon and other large fishes of the same class. The better grades are packed in kegs, inferior grades being made into small cakes. It is chiefly prepared in Russia, where it is greatly esteemed. It is also made to some extent in this and other countries. It is eaten on bread with oil, lemon juice or vinegar.

CAYENNE. (See *Pepper*).

CEREALS. Are all the species of grass which bear edibles grain, for instance, wheat, corn, rye, oats and rice.

CELERY. The leaf stalks of this plant, when blanched, are used as a salad and as an appetizer. The dwarf varieties are more highly esteemed than the larger ones. It is best from January to March.

CHAMPIGNONS. The French name for *mushrooms*, which are canned and imported into this country from France, where mushrooms are more highly esteemed, more extensively used and more carefully cultivated than they are in this country.

CHARGES. These items in the wholesalers' bill often lead to much dispute but a dealer of ordinary business ability should understand positively whether he buys his goods in the store or delivered at the depot, or freight free to their destination. The charge of portage or hauling to the depot is usually a fair one, although the rate is sometimes open to question. Wholesalers should be exact and reasonable in making charges and then adhere firmly to them, because if quickly waived, the retailer is

convinced that they were never just—and retailers should never dispute them—unless certain of their ground. Grocery goods are generally sold in store and when extra packages are required, they are generally charged.

CHEDDAR. Derived from the cheeses originally made in Cheddar, Eng.; used by the trade to designate a small high cheese.

CHEESE. Is made from milk caused to coagulate by the addition of some acid (usually rennet) and separating the curd from the whey and pressing it in suitable moulds.

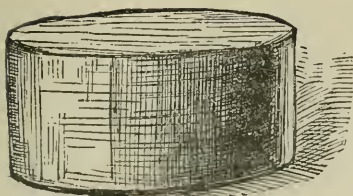
There are many varieties of C. usually named from the places where they were first produced. Some of the most famous are the *Cheddar*, (which see) the *Neuchatel*, a French C. which is made from pure cream; *Cheshire* and *Double Gloucester*, made from the whole milk; *Single Gloucester*, from half new milk and half skimmed milk; *Stilton* and *Wiltshire*. *Gouda* C. is made in Holland by curdling the milk with muriatic acid instead of rennet in order to exclude mites (which see). *Edam* C. is a firm, rich cheese, almost perfectly round, about the size of a cocoanut and is painted red. *Limburger* C. mostly esteemed by the Germans and Hollanders, is ripened by slow heat during its manufacture.

Skimmed milk cheese is a poor quality made from skimmed milk. Half skimmed C. is made from half skimmed and half whole milk, the skimmed evening's milk being added to the whole morning's milk. Full cream cheeses are those made from milk the cream, and are, of course the most desirable article. *Cream Cheddar* and *Neuchatel* are made from cream alone.

Fineapple Cheese. A fine grade of cheese generally imported, and made in the form of that fruit. Dealers should tell their customers to cut a P. C. so that the upper portion will remain as a lid while the inside is cut out as needed, preserving both the cheese and its shape.

Schweitzer; or *Swiss Cheese* is a strong, tough cheese, which is largely made and eaten by our German-American people. It has a strong odor.

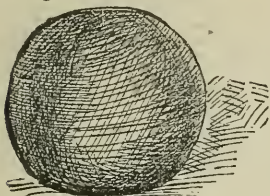
The best Italian cheese is *Parmesan*, a strong skimmed milk article. In France *Roquefort* is the high grade. In Switzerland



YOUNG AMERICA.



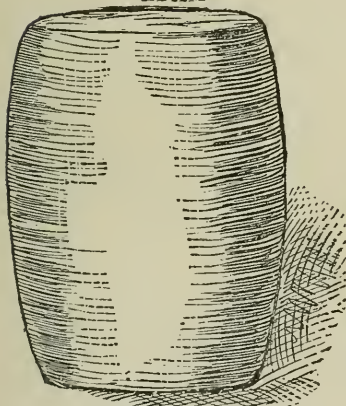
NEUCHATEL.



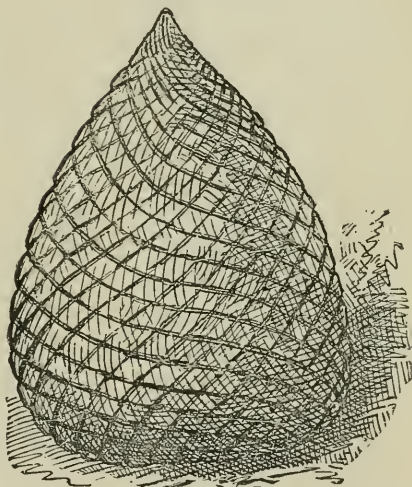
EDAM



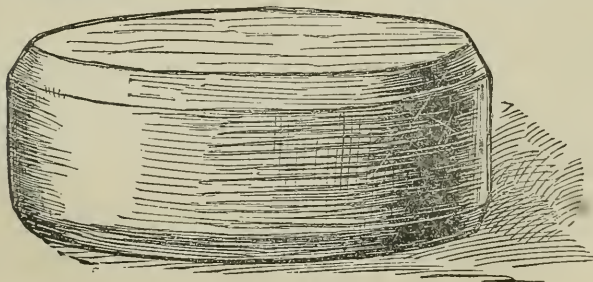
CREAM CHEESE.



CHEDDAR



PINEAPPLE.



GOUDA.

Gruyere and Neuchatel—the latter is made in $\frac{1}{2}$ -lb. size from goat's milk and imported while fresh. Gruyere is skimmed cow's milk flavored with herbs. (See full page illustration of cheese.)

As an article of food, cheese is very nutritious, but when eaten in quantities it burdens the digestive organs, though when taken in small quantities as a condiment, it stimulates and aids the digestion of rich food and desserts.

The care of cheese in the store is often neglected. In warm weather they should be kept in a cool, dry place and be frequently inspected and turned over in their boxes; if they show signs of swelling it is well to pierce them with a wire to give vent to the gas, which can afterwards be expelled by gentle pressure on the swollen portion. All mold or mites on the top of the cheese should be neatly scraped off, the surface rubbed with a little sweet oil afterwards, and if the loose sheet or plate which lies on the top and bottom of the cheese is damp, it should be replaced by a clean and dry one.

CHEESE KNIFE. Several styles of patent knives are offered to the trade, some of which, by means of a graduated scale enable the grocer to cut a given weight of cheese with accuracy. The Enterprise M'f'g Co. of Phila. make a most satisfactory C. Knife of this class.

CHEESE SAFE. A wire cover framed in wood and hinged in the centre so as to uncover half the cheese when cutting it. It excludes flies and mice and yet admits air. It does not exclude the tasting customer and a burglar-proof cheese safe is one of the greatest needs of the trade!

CHEESE TRYER. (*See Pocket Tryer.*)

CHERRY. A much esteemed fruit, eaten both raw and in the cooked state. In the forests of France, it is made the chief ingredient of soup. It is also put up in cans, or, being stoned and dried, becomes the *pitted cherry* of commerce. The most esteemed variety of this fruit is the *wax cherry*, a beautiful cherry of light color, with rosy cheeks, about the size of the ordinary "red" or "black" cherry, named from its beautiful waxy appearance. They generally arrive in market in May. Many

liquors are made from or flavored with cherries such as cherry brandy, kirschwasser, ratafia, and maraschino.

CHESTNUTS, are eaten either raw, boiled, steamed or roasted. They ripen with the first frost and are sometimes kiln-dried in order to preserve them. The American chestnut is smaller but sweeter than the Spanish chestnut. There is also a very small dwarf variety of the American chestnut known as the *chincapin*. See Polenta.

CHICORY or **SUCCORY** is a plant cultivated for the sake of its root, which is kiln-dried, cut into small pieces and roasted with a little butter in a coffee roaster. It is then ground and used as a substitute for, or as an adulteration of coffee. The chicory itself is frequently adulterated with such things as roasted beans, carrots, acorns, horse chestnuts, saw dust, &c.

CHINCAPIN. A dwarfed species of the chestnut (which see).

CHOCOLATE. (See *Cocoa*). Prepared from the seeds or beans of the *cocoa* tree. These are reduced to a paste and mixed with sugar and a variety of spices, such as cinnamon, cloves, vanilla, etc., and moulded into cakes. It makes a pleasant and nutritious drink when dissolved in milk or hot water. It is also extensively used in cooking and as a confection. Cooking C. is made with little or no sugar, while for other purposes more or less sugar is added to sweeten it. Good chocolate should be smooth and firm, not gritty when broken, and should leave no sediment when dissolved. It is largely adulterated with flour, oatmeal, powdered rice, etc., and colored with annato and other dyes.

CHOW-CHOW. A mixture of pickles of various sorts in mustard.

CHOWDER. A dish composed of fish, pork, onions, biscuit, etc., stewed together, and much appreciated on the New England coast, where clam chowder and fish chowder parties are very common. It now enters the trade as an article of canned goods.

CHUTNEY. A condiment, much esteemed in India, which is based on mangoes and very highly seasoned with various spices.

CIDER. Is obtained from apples by chopping and grinding them to a pulp, and then by subjecting them to pressure in a mill,

when a dark liquid is obtained which almost immediately begins to ferment and in a few days becomes the clear liquid known to commerce as sweet cider. If great care is not taken to preserve it, it quickly turns sour and becomes "hard cider." The best kinds of vinegar, known as *cider* or *apple vinegar*, are made directly from cider by simply placing it in a warm place and allowing it to ferment. On purchasing cider, if the head of the cask is swollen by pressure from within, a hole should be bored in order to relieve the pressure and prevent leakage. It should be kept in the coolest part of the cellar as otherwise it is apt to sour after being tapped. At a temperature of about 75° it will gradually become vinegar. It is sometimes made into an imitation of champagne and sold for that article.

CIGARS. Grocers, especially country dealers and those who handle wines in the cities are adding tobaccos and cigars to their stocks. We need not enter into the detail of their manufacture or mention the numerous brands. The three important grades now offered are Havana, Key West and Domestic. (See Tobacco.)

CINNAMON BARK is brought from Ceylon and the West

Indies. The best qualities are obtained from the young branches of the tree. The bark is cut off in strips and exposed to the sun, when, as it dries, it curls up into quills, the smaller of which are inserted into the larger and the whole tied up into bundles. It has a fragrant, aromatic flavor and is used like other spices in cooking and confectionery. It is largely adulterated with cassia bark (which see) and in fact, a great deal of what is commonly sold as cinnamon is really nothing but pure cassia bark.



Cut No. 1 shows the pure cinnamon in thin, closely filled quills. No. 2 shows the cassia as a thicker bark.

CITRON. A fruit produced in tropical climates, which, although it is sometimes raised to great perfection in our green-houses, is most generally seen in our markets in the form of cured preserves. There are numerous varieties of the citron, some of the largest being sometimes 9 inches in length and weighing as much as 20 pounds. The rind of the fruit makes a delicious preserve and the juice may be used in much the same way as lemon juice, although it is less acid—it is used to some



extent in flavoring liquors.

CLAM. The most common shell-fish found along our sea-coast. In a canned form they have gone into extensive use, especially in the West.

CLOVES are the flower buds of the clove tree. They are dried in the smoke of a wood fire and by exposure to the sun, and are used in flavoring desserts and confectionery. Large, dark, well-formed cloves are the best. Those known as Amboyna cloves are most esteemed.



Mother Cloves is the name applied to the dried fruit after it has been ripened. It has similar properties to the ordinary clove, but is much weaker.

Our cut shows the plant in flower and the clove separated.

COCOA, Or CACAO. Is obtained from the seeds found in the pods of the *Cacao*, a palm growing along the sea coast of the tropical portions of South America. It is a very nutritious article of diet and is prepared for use in several ways. The *Common C.* or *soluble C.* is prepared by reducing the beans, shells and all to a paste in which form it may be mixed with sugar, starch, etc. (see chocolate). When the beans are shelled, bruised and broken into small pieces they become the *C. nibs* of commerce.

This is the purest C. which can be obtained in our market. The most palatable and lightest drink obtained from C. is that obtained by making an infusion in the C. nibs in boiling water in the same way as coffee is made. A similar infusion is made from the roasted shells of the beans, and by some this is considered a lighter and more digestible beverage than the other preparations. (See full page illustration.)

COCOANUT. The fruit of the cocoanut-palm, which is a native of the South Sea Islands, but which is now found in all tropical regions. The solid portion of the nut is much esteemed and extensively used in making cakes and pies. Dessicated C. is a patent preparation of C., containing sugar and carbonate of soda. Macerated C. is made by boiling the C. until soft and almost fluid and then canning it. These preparations are used in the same way as the cocoanut and their main advantage is their more convenient form. The most desirable form of dessicated cocoanut is

Noix de Coco, manufactured direct from their own immense importations of cocoanuts, by Warner and Merritt, of Phila., under the original patent of Gorton, now owned by them. The fine and reliable quality of *Noix de Coco*, and the active advertising of its proprietors, make it a quick selling article for the retailer.

Cokernut is a way of spelling cocoanut, which was introduced by the English custom houses to distinguish it from other goods having very similar names, and this spelling is gradually finding favor with the trade.

CODFISH. The most common food fish except the herring.



Taken in large quantities by the hook, along the North Atlantic coasts and the Arctic seas. The Dutch cod fisheries of the 14th Century were very extensive and the English, French and Norwegian catch is immense. In this country, the conflicts between the fishermen of the Canadian provinces and the U. S. have given rise to many diplomatic controversies. The fish vary in size from a few pounds to about one hundred, the average being less than ten pounds. One man has been known to take over 500 in one day on the Newfoundland Banks. It is a very prolific



COCOANUT PALM.

fish, the female often containing from four to eight million eggs. They are used fresh, salted or dried, and in the latter state are usually sold by the quintal, which is 112 pounds.

Dun-fish, so-called from their color, are cod-fish cured by being salted and piled under salt grass for several months in a dark room, they are then opened and piled again for the same time.

Boneless cod is prepared in strips and packed in small boxes, in which form inferior fish is often substituted.

COFFEE. This well known article of commerce is composed of the seeds of the berry (see full page illustration) of the coffee-tree, which grows in all warm climates. The different grades in the market come from different varieties of the tree, and different countries where it is produced. Thus, Java coffee is brought from Java in the East Indies. Rio coffee is that raised in Brazil and shipped from Rio de Janeiro. Practically, however, a large portion of the coffee sold as "Java," and "Mocha" and other much esteemed grades, is really nothing but Brazilian coffee, prepared in imitation of the other grades.

The adulterations of ground coffee are very numerous, all sorts of wasted grains, nuts and shells having been used for this purpose, but chicory root (which see) has been the most extensive adulteration and in England this has been demanded by the consumer as a substitute for coffee. It is even said that coffee beans have been made by grinding the chicory root to a powder, moulding it into the proper shape, roasting it and coloring it in imitation of the coffee berry. Few positively hurtful impurities, however are apt to be found in coffee, and by buying the whole, unground coffee, we may feel fairly sure of obtaining a pure article; and even in ground coffee, the reports as to the extent of its adulteration have been largely exaggerated; but it is a mistake to suppose that whole roasted coffee is not easily adulterated. The roaster can by manipulating the coffee in its roasting, glaze it with grease or gum, and add to its exterior appearance while materially injuring its real value. Great care should be taken of coffee in the store either green or roasted, as it absorbs many odors which injure its flavor.

Coffee Extract, a patent compound, very seldom made from, or containing any pure coffee, which is extensively used in cheap boarding houses by mixing it with the real article. It naturally enjoyed a better demand when coffee sold at thirty-five and forty cents, than at its present reasonable price.

Coffee Essence, a very strong infusion of coffee, mixed with extract of chiccory and burnt sugar until it is about as thick as molasses. It should be kept in well corked bottles.

For coffee roasting see article on *Roasting*.

We are indebted for the following general descriptions to the excellent book on Coffee published by Messrs. Chase & Sanborn, coffee importers, Boston, Mass.

Varieties of Coffees. Varieties of the plant are found growing in Brazil, Peru, Central America, Java and Sumatra, Ceylon, South India, Africa (including Abyssinia, Natal, Gold Coast, Liberia,) Arabia, Manilla, the Mauritius, in the West India Islands and islands of the Pacific. But Brazil in the Western Hemisphere, Java, Sumatra, Ceylon and India in the Eastern Hemisphere, constitute at this time the great centres for coffee production.

Coffee is divided commercially into two classes, strong and mild. Strong coffee includes Rio and Santos, but more particularly Rio. East India coffee embraces all coffee raised east of the Cape of Good Hope, and with the exception of Mocha is principally raised on Islands. They are Javas, Ceylons, Malabars and Madagascars.

The coffee of Brazil varies greatly in size and color. Most of the Rio received here is a small sized bean, varying in color from a light to a dark green, with some of a yellow hue known as Golden Rio. In flavor it is peculiarly distinct from all other coffee grown, being very rank and strong.

Santos coffee is produced in the southern districts of the Brazilian Empire, and possesses in a mild degree all the characteristics of Rio.

Mild coffee embraces all coffees except Rio and Santos. Some

of them are very rank and of positive flavor; they are sold separately or are mixed and combined in such a manner as to lose their individuality. The most prominent of all mild coffees is Java, raised on the islands of Java and Sumatra, which ranks first in the estimation of the coffee-drinking public of the United States.

Java coffee is classified by the names of the districts as follows: Fancy Marks, Interiors, Preangers, Samarangs, Malangs, Kadoes, Passoeroeangs, Sumatras and Singapores. Fancy Marks include Mandehling, Ayer-Bangies, Ankola. The bean is large and stylish, drinks rich and strong, but lacks the finer qualities of private plantation Javas, which we shall refer to later, but are highly valued.

Interiors, so called from being raised in the interior of the Island of Sumatra, are better known in this country as Padang Java, deriving that name from the port of shipment, which is Padang. They comprise the larger part of the Java coffee sold in this country, and for years have been considered a very superior coffee. They are not so stylish as Fancy Marks; drink rich and strong, and possess a characteristic flavor of their own.

Preanger, raised on the Island of Java, is somewhat different from Padang, both in style and drink, being a smaller bean and ranker, or stronger in the cup. The standard of excellence is not being kept up and it is not so highly prized as formerly. At one time it outranked interior Padang.

Samarangs, Malangs, Kadoes, Passoeroeangs, can be described under one head, closely resembling each other in one leading characteristic, namely: Inferiority, and sell for about 20 per cent. less than Interior Padangs. The mild coffees of South America excel them in style and drinking qualities, and were it not for the all powerful name of Java which they bear, they would not be recognized as even approaching fineness. They are sold largely in the Eastern States, paying a large profit to wholesale dealers, and at the same time easing their con-

sciences, by allowing them to sell a straight Java coffee and literally doing so, but in no particular contributing a coffee that will suit the consumer.

Sumatra coffee is raised on the Island of Sumatra, and is known commercially as Free Java, from the fact that the Dutch Government has no control over the sale or growth of it. It is a large, irregular bean, inferior in quality. Little care being taken in the cultivation and curing; a large proportion of it arrives here in a condition known as ground stained, which we shall refer to later.

Singapore coffee embraces coffee raised adjacent to and shipped from Singapore, but the same grade is also shipped from Macassar and Bonthyne. Each of them has a peculiar taste, which renders it very disagreeable. This coffee, years ago, was very freely sold in this country and largely sold West; but as its character became known the consumption as Singapore Java ceased. In fact, although large quantities are imported into this country, it is a common remark that there never is a pound sold. The plain English of it is, that it is re-colored in New York, (chemically), and sold as Padang. Lately there has been imported into the United States what is called plantation coffee, that is, coffee raised from fine selected seed on large private estates on the Island of Java, such estates being under the best agricultural conditions, with unlimited capital and intelligent manipulation, yield a coffee which in the cup is the finest ever produced; under the above condition some of these plantations have acquired a reputation that has reached all over the world.

The sale of Padang Java is conducted in the following manner: It is advertised and sold under the auspices of the Dutch Government in quarterly sales, occurring in the months of March, June, September and December. It is put up at auction, in one hundred picul lots, (a picul is 133½ lbs.) and no buyer can purchase more than this quantity at one bidding.

Interior or Padang Java is raised on Government or wild land.

Java coffee, regardless of quality, is always shipped in grass mats, varying in weight, from 60 to 80 lbs. each.

Java coffee possesses one feature peculiar to no other coffee, namely, that of turning very decidedly brown or yellow, but more especially brown. Interior and Fancy Padangs possess this peculiarity more than other varieties. If this color was a sure indication of age, we should freely concur with the views of the trade generally, that a brown Java possessed finer drinking qualities than a pale. While we do believe that age does improve its drinking qualities, we firmly believe that the color (if natural) in no particular adds to or detracts from its value in the cup.

Practically, the demand for a brown Java is an American caprice which has enhanced its commercial value two to three cents per pound, and this caprice is also directly responsible for the immense quantity of imitation brown Java, which is at present flooding the market. In New York City tons of such coffee are produced daily. This condition of affairs will exist just as long as it is the exception rather than the rule, for wholesale dealers to buy coffee on style and color and neglect through carelessness (but oftener ignorance), to roast and test samples in the cups after the manner of testing teas.

“Old Government Java.” This term arises from the fact that the Dutch Government formerly held considerable quantities for a long time without selling it, and this was usually of very good quality. Old Government Java soon became a trade term denoting highest quality. Of late years this term has been used indiscriminately to designate all Javas of whatever quality, and ceased to possess any real significance as to extra merit.

Mocha, the aristocratic coffee of the world, is grown in Arabia. It is found on both sides of the Red Sea, that on the north side coming from Hodgeda and commonly called “genuine Arabian Mocha,” is raised in very hot and dry localities. The bean is very small and irregular in appearance, drinks hard, acrid and peculiar, and when roasted is one of the most unsightly coffees

grown—invariably quakery—(see article on roasting) owing to the intense heat prevalent where the coffee grows. This is transported to Aden, (the shipping port,) on the backs of camels. Here it is shelled and matted for shipment. The United States are the principal consumers of this grade. That which comes from the south, from the Berbia district, has quite a large bean, drinks well, and is prized very highly. Quite lately it has been shipped to the United States, and its intrinsic merit as it becomes known, will eventually make it very desirable. Probably no one kind of coffee coming to the United States is so generally adulterated or counterfeited. Vast quantities of Malabar and small bean Ceylons are shipped to Alexandria, then matted and exported as genuine Mocha. The imports of Mocha received into the United States average about 15,000 bales annually, only about one-half of which is probably of Arabian growth.

Ceylon coffee takes its name from the Island of Ceylon, where it grows, and is to-day the great rival of Java in the East. Colombo is the port of shipment, and most of the Ceylon goes to England. It is divided into two classes, Plantation and Native. Plantation Ceylon takes high rank and is considered one of the finest coffees grown. It is raised on elevated lands, the greatest care being taken in its cultivation. It is a very solid, oily bean, transparent in color, and is largely consumed in Europe, where it is highly prized, occupying the position there that Padang Java does in the United States. It is packed in small and large *casks*. Native or common Ceylon is raised on the low lands, and resembles in color and size of bean Maracaibo or Savanilla, but lacks the strength of either. It is quite poor, drinks weak, and in coffee parlance, roasts quakery, resulting from the numerous blighted or undeveloped beans which possess little virtue or strength. Considerable quantities of Male-berry or Pea-berry Ceylon are shipped to this country and are used as a substitute for Male-berry Java.

Maracaibo coffee is a product of the northern part of South

America, being raised in Venezuela. Like Java coffee, it is grown in different districts, each district producing a distinct variety, which are known as Cucuta, Merida, Tovar, Bocono and Trujillo. Maracaibo is the principal shipping port. Probably no coffee raised is sold under such false colors as this. It has been found to be an excellent substitute for Java and also for mixing with Java, and its use for this purpose is fully recognized by the trade. The United States consumes five times as much as there is imported into the United States. Maracaibo coffees are packed in a peculiar bag, made of string, resembling a fine net, the contents being plainly seen through the meshes.

Savanilla coffee is grown in the United States of Columbia, separated from the Cucuta district by a high range of mountains, over which the coffee has to be transported on the backs of mules to reach the shipping port of Maracaibo. It is a light-colored bean of the same general style and quality as the better grades of Maracaibo, but averaging larger in size and combining the united peculiarities of both Cucuta and Merida. After it leaves the hands of the importers and jobbers it is rarely known as Savanilla, but is re-christened Padang Java and is distributed throughout the country as such.

Bogota and Coban coffee, other South American products, are finding their way to the United States and are becoming favorably known. They roast Java style, being large and handsome beans and are used for the same general purposes as their cousins Maracaibo and Savanilla, namely, mixing with Java.

Jamaica coffee is grown on the Island of Jamaica and is much superior to any other variety grown in the West Indies; it possesses fine aromatic qualities, and is very popular with intelligent coffee dealers. Blue Mountain Jamaica, which certainly possesses as much merit as any coffee raised, its solid, heavy, oily bean, almost transparent in color, will, when roasted and ground, make a delicious and fragrant cup of coffee. It is shipped largely to England, where its splendid qualities are appreciated. It is usually packed in barrels or casks, and with the exception of

Plantation Ceylon is the only coffee so exported.

The more prominent coffees of Central America are Nicaragua, San Salvador, Guatamala and Costa Rica, all of which are at times sold as Costa Rica. This last coffee has a peculiar, positive flavor, is dark liquor in the cup, very strong and acid to the taste. In color the bean is green and generally semi-transparent, in size is often large and flat, and is highly prized by experts as an excellent coffee. It has many attributes of other coffees, especially that of Mocha, and there is no doubt but what selected Costa Rica will make a cup of coffee which entitles it to high rank.

Guatamala coffee has many of the qualities of Costa Rica, and is often sold as such. It drinks like a Costa Rica, only smoother, lacking its pungency, roasts handsomely, and develops one peculiarity after roasting, the bean cracks open, showing the white hull, and is very attractive in style, either raw or roasted. It is universally coming into favor and its production promises to be doubled within the next five years. It is very largely used in the West, and is sold and consumed on its merits.

San Salvador coffee is similar to Guatamala, but not so handsome or stylish; it drinks well, and has, when brought to market and exposed to the air, a sweet smell resembling chocolate or cocoa, and is inclined to turn light-yellow or straw-color with age.

Nicaragua coffee is among the poorest of the Central American products; it is not particularly stylish, and in color is of a dull gray hue or mottled straw, and has only fair drinking qualities.

Laguayra coffee is raised in Venezuela, a South American State. This coffee is of a dark-green color and small bean, similar in appearance to Rio, and when Rio has been scarce it has been polished and sold as such. It possesses mild qualities, but often develops more or less Rio flavor.

Cape Haytien and St. Marc productions have a slight preference in market value over San Domingo coffee. They drink fairly well, but is not much used for mixing, and sell for about three-quarters of the price of good Maracaibo.

Mexican coffee. The improvement in this variety has been something wonderful. Five years ago the demand was very limited, owing to its particularly poor drinking qualities, but at the present time this peculiarity has nearly disappeared, and some exceedingly fine coffees are being received from Mexico, ranking equal to any of the South American mild grades, the rancid, disagreeable flavor once disgustingly noticeable having entirely disappeared. The two principal producing districts are Cordova and Oajaca. The Cordova product is a large-sized, light-colored bean, resembling fine Maracaibo, in appearance green, roasting large and smooth, and possesses a peculiar flavor in the cup, somewhat resembling Mocha. That grown in the Oajaca district resembles Plantation Ceylon in style of roast and drinking qualities. Porto Rico at one time produced a coffee of that name, which was exceedingly popular, and the sale in this country, both East and West, was large, but, like Costa Rica coffee, it is inclined to become sour and hidey, and the experience of the trade has been such as to entirely stop the demand. It resembles Costa Rica in style of bean, and has about the same market value.

Liberia produces a variety of coffee but little used. It has very marked peculiarities. It is a large, misshapen bean, and drinks strong and rank, possessing no fine qualities. With the exception of Mocha, its market value is the highest of any on the list, owing no doubt to its scarcity and the demand for it as a novelty.

African coffee grown on the east coast of Africa is a small-sized bean, gnarley and unsightly in appearance, resembling Liberian. In the cup it drinks rank, harsh-flavored and generally disagreeable, and is very unsalable.

Manilla coffee is the product of the Island of Manilla, and is only occasionally imported into this country. It possesses no qualities that would recommend it, drinking like many of the package preparations labelled coffee.

Malabar coffee is a product of the East India Islands and is a

fine variety. The bulk of the crop is shipped to Alexandria, where it is repacked and sold as Mocha.

California has turned her attention to the growth of coffee, but as yet it has not passed beyond the limit of experiment. The samples that have been received, show a large white bean with flavor resembling Costa Rica, from which seed it is raised.

Skimmings. This variety is literally what its name indicates, and the process of obtaining it is as follows: A greater or less portion of each cargo is found on arrival to have become damaged by dampness, discoloring the bean and rendering it musty and mouldy. That portion of the cargo packed along the sides and top of the hold are more or less stained, and can be easily detected by the outward appearance of the bag or mat. These are cut open and the damaged beans are skimmed off; the remainder are then re-bagged and sold as sound coffee, although it is an open question whether they can be considered as such. Many good judges maintain that as coffee is very susceptible to outside flavors, the odor of the mouldy beans penetrate through the whole bag. The skimmings of Java after being rebagged are classified and marked by a small stencil or brush on one corner of the package, as follows: G. S. signifying good skimmings; P. S. poor skimmings; S. S. store sweepings. In appearance good Java skimmings show very little damage. In fact, unless closely examined, would pass for a sound coffee and sell readily for from 2 to 3 cents per pound less than the straight goods. Usually, the demand is in excess of the supply, and this is met by using Singapore Java, (which we have described as very offensive in the cup) and coloring South American mild coffees by sweating, taking care to sprink'le in a few damaged or black beans, in order to fully stamp them as skimmings. After roasting, it is impossible to detect these goods from sound coffee by their appearance. It is very rare to find a lot that in the cup does not develop musty flavors.

Rios are classified in the same way, with an additional letter denoting the color of the goods, viz: G. L. S. signifying good

light skimmings; and G. D. S. signifying good dark skimmings. Owing to the short time occupied on the passage, Rio, as compared with Java varieties, arrive in much better condition, and to all intents and purposes Rio skimmings are equal to sound Rio.

Roasting and Grinding. The coffee roasting machine consists of a large round cylinder, revolving regularly and moved by steam power, suspended over a coal fire. The entire surface of the cylinder being perforated with small holes allows the heat to penetrate evenly and thoroughly. At one end is a hopper into which the green coffee is poured, and through the centre is a long tryer enabling the operator to ascertain just how far the roast is advanced. As soon as the coffee is sufficiently browned it is emptied into a large square box with a wire screen bottom, termed a cooler, the operator in the meantime throws over the hot coffee a small quantity of cold water. The rapid vaporizing of the water carries off the heat, and the changes wrought during this part of the process cause the berry to swell, thus giving it a much more sightly and attractive appearance. The addition of water does not add to the weight of the coffee as much as might be supposed, for the heat is so intense as to convert most of the water into steam, which readily escapes. At an opening in the end of the cooler is fitted a powerful blower, forcing cold air through the heated beans until they assume a condition which allows their being handled. Meanwhile the coffee is thoroughly agitated while cooling, as the oil of the coffee would appear on the surface if allowed to remain quiet.

The shrinkage of coffee by roasting averages 15 to 16 per cent.; extremely green lots losing 18 per cent., while a very old coffee will not lose over 12 or 13 per cent. The roasting process will develop in every coffee more or less of what is termed in coffee parlance, quakers. Too much importance is attached to these kernels, many supposing that their presence indicates a mixture. Such is not the case, they are simply a bean, which, while on the trees become sun-dried, the oil, which is the essence or flavor of coffee, evaporating, leaving nothing but a lifeless berry; they roast white, and are perfectly tasteless.

Simple as it may seem, the process of grinding the roasted bean is one that requires more attention than what is at present given to it. Coarse ground coffee requires protracted boiling to extract its strength, and much boiling is fatal to a good cup of coffee. While one may grind too finely, the mistake of grinding too coarsely is the one most frequently made. Just to what degree of fineness it should be ground depends somewhat on the manner of making the coffee.

COKERNUT. This mode of spelling cocoanut was introduced by the London custom-house, in order to distinguish more widely between this and other articles spelt much in the same manner and so extensively used in commercial circles.

COMESTIBLES. A term borrowed from the French, much used in England and on the continent to express the entire class of eatable goods.

COMPRESSED YEAST. The most powerful of all fermenting agents, is in this country comparatively by a new yeast, having been introduced from Germany some 20 years ago. It is a purely vegetable mixture of the fungi family and is very rapid in its action. Introduced and manufactured by Gaff, Fleischmann & Co., 243 N. 8th St. Philadelphia.

CONDENSED MILK. The manufacture of condensed milk is thus described:—"When the milk is brought into the factory it is carefully strained, placed in cans or pails, which are put into a tank of water kept hot by steam coils. When hot it is transferred to larger, steam-heated, open vessels and quickly brought to a boil. This preliminary heating and boiling has for its object the expulsion of the gases of the milk, which would cause it to foam in the vacuum pan, and also to add to the keeping quality of the milk by destroying the mould germs.

A second straining follows, after which the milk is transferred to a vacuum pan, where, at a temperature below 160° Fahrenheit, it boils, and is rapidly concentrated to any degree desired. The vacuum pan employed is a close vessel of copper, egg-shaped, about six feet high and four and a half feet in diameter. It is

heated by steam coils within and a steam jacket without, enclosing the lower portion. In one side of the dome is a small window through which the gas illuminates the interior, while on the opposite side is an eye-glass through which the condition of the contents may be observed. The pan is also provided with a vacuum guage and test sticks.

Much of the milk used in cities is simply concentrated without any addition of sugar. The process of concentration is continued in the vacuum pan until one gallon of milk has been reduced to little less than a quart—one volume of condensed milk corresponding to about four and three-tenths volumes of milk. Condensed milk intended to be preserved any length of time has an addition of pure cane sugar made to it during boiling, and is usually put up in sealed cans. This sugared or “preserved” milk will keep for many years.”

CONFECTIONERY AND CANDY. All the various kinds of candy may be brought under the general divisions of Stick candy; Mixtures; Machine-work, under which heading would be included the fancy shapes of clear candy, cut or moulded into the shape of beasts and various figures; Lozenge, which may be considered a class of machine-work; Hards or comfits, which consist of a nut kernel or other suitable article enclosed in a sugar coating; Fruits, which include all the ways in which fruits are preserved, in such a manner as to become a solid candy, called “candied fruit;” Gum or Pastes, including such candies as gum drops, marsh mallows, ect., which are based on gum arabic or some similar gum; Creams, and lastly, Pan work, which includes “taffy,” and similar candies which are made into large flat cakes. All of these different varieties are composed chiefly of sugar, other ingredients being added to give the required flavor and consistency.

Recently, the price of confections has been considerably reduced by the introduction of glucose into its manufacture, and this is now generally conceded to have no injurious properties, but it is rather inferior in quality.

CONTRACTS. (See *Index*).

COOPS. Patent coops which fold up in such a way that they can be easily returned in a small compass, are now made in many forms.

CORIANDER SEED. The fruit of a small plant, growing chiefly in the south of Europe. Used as a flavoring in cooking and making curries &c. and in confectionery.

CORK, is the bark of a species of oak tree which grows along the Mediterranean. The outer bark cracks and becomes spongy as the inner bark forms. The trees are peeled every ten years which is easily done as the tree is really shedding its bark, and the inner coat preserves and nourishes it sufficiently. The finest cork is the hardest to separate. The trees live to the age of 150 years and are from thirty to forty feet high. The great sheets of bark are charred on both sides, and while hot are laid on each other and a weight put upon them, which flattened them, they are then stripped in bales for export.

CORKSCREW. A grocer who sells bottled goods and has no corkscrews in his stock is short sighted. They can often be sold to ladies, who prefer the Patent Lever Corkscrews which do away with the strain of pulling the cork. That a grocer must have one corkscrew admits of no question. Customers naturally expect to have their purchases opened if they request it.

CORN. Properly, this is a name applied to all kinds of farinaceous grains which are used as food, in which sense we find it used in the Bible and in old writings, but in many countries it is now restricted to some particular kind of grain, as for instance, in Scotland, corn means *oats* and in England, it means *wheat*, and so we find English books speaking of "threshing corn" and of "the waving fields of corn," just as we speak of threshing the *wheat* and wavy fields of *wheat*. In our own country, the term is restricted to *maize* or *Indian corn*, of which several varieties are cultivated. There is the *Yellow corn*, grown in the northern states, and the *White* or *Southern corn*; which are named from the color of the grain when ripe, and the *Sweet corn*, the ripe grain of which has a shrivelled look. This is the variety most esteemed

for table use as a vegetable. There is also a small variety, called *Popcorn*, so named from the slight explosion with which the husk of the grain bursts when the interior is expanded by heat in roasting.

Corn is most extensively used in the shape of corn meal, which is made into bread of various kinds and in large portions of the country forms the chief article of food. It is also extensively canned for use as a vegetable.

COTTON SEED OIL. This oil is rapidly going into domestic use as a substitute for lard and olive oil. For years it has been shipped to Spain and Italy and sent back to us as pure olive oil. Many families are prejudiced against lard, and prefer to cook in olive oil, and for this purpose cotton seed oil answers as well and is much cheaper. We expect to see it sold in every grocery store in the U. S. before many years. It is not prepared by any special process but is simply the refined vegetable oil pressed from the cotton seed. It is largely used for packing American sardines and in making soaps.

CRAB. The popular name of all crustaceans. There are a great variety of them; some existing entirely in the sea, others in shallow water both fresh and salt, while other species may be found on the land. The catch and canning of crabs on the Chesapeake is thus described:—



Each of the boats carries 600 feet of lines, anchors, buoys, etc. Small lateral lines are attached to the main line at intervals of 18 inches. To these the bait is attached—tripe alone is used. The catcher starts about three o'clock in the morning. At stated periods the boats are visited by a larger one which carries the catch to the factory. Here the crabs are carefully assorted, and any that may have died during the trip are thrown out. The catchers having received positive instructions not to take spawning crabs, none are brought in. They are then placed in latticed cars holding 250 dozens each. These are run into steaming tanks. Sixty pounds of steam is instantly turned on. Each in-

dividual crab, with one spasmodic twist, immediately relinquishes all earthly hopes and ambitions, and dies, that man may profit by his involuntary sacrifice. There is no lingering torture, as in the old-fashioned way of boiling, to cause the meat to become fevered and soggy. It leaves the shell as white, sweet and dry as it is possible to get it. After the steaming the crabs are passed to the "strippers." These, standing before a trough of clear, cold water, dexterously remove the top shell, viscera, etc., and after carefully washing each crab pass it to the pickers, who occupy long tables running the length of the house. The meat is here picked out into half-gallon buckets to the tune of "We'll Put John on the Island," and "I'm Traveling to My Grave," a hundred colored voices taking up the refrain. Afterward it is weighed and carefully examined to see that it is clear of shell. If not up to the standard it is returned to the picker. From the weigher it goes to the canning-room, where it is packed in one and two pound cans, and then passed to the process room, where the operation of hermetically sealing is conducted. Every can is afterward examined to see that it is perfect. If found so it is varnished, wrapped in a beautiful label and packed two dozen in a case, when it is ready for market. As it will now keep for years and in all climates, markets can be and are successfully sought at the most distant points.

CRAB APPLE Is the parent fruit from which all the varieties of the cultivated apple have sprung. It is a small fruit, about one inch in diameter, having a harsh, acid taste, which renders it almost uneatable in the raw state. Generally used for making preserves and jellies.

CRACKERS Or BISCUIT. One Philadelphia house advertises over three hundred varieties of biscuit. They are made in all shapes, sizes and styles. The cracker baker even encroaches upon the confectioner and makes fancy cakes nearly approaching to candies. Formerly, fine biscuit were mainly imported from England and Great Britain, but our home manufacturers have of late, raised the American product up to a very

high standard, and goods manufactured in Phila. are now shipped all over the world, in direct and equal competition with the best English makers. It is important to keep the freshest goods in this line, and they should be bought in such quantities as can be quickly sold, unless they are packed in tin, and in no case should they be allowed to remain in a damp place. Walter G. Wilson & Co., of Phila., are among the most prominent cracker bakers of the United States.

CRANBERRY. A small acid fruit, growing in boggy and marshy ground, largely used for making tarts and jam. A great many are raised in New Jersey, but these are not as highly esteemed as the Cape Cod berry. Great care should be taken in cool weather to avoid buying frost-bitten ones.

More money has been made and more lost in the culture of cranberries than in almost any other fruit. The *Cleveland Press* says:—"In the year 1871 the yield was the greatest ever known, but since then there has seldom been a full crop, while it has too frequently been a total failure. Early frosts kill the berries or the cranberry worm devastates the bushes. The soil for producing cranberries must be a marsh of muck or peat that can be drained a foot below the surface, and capable of being flooded in winter to protect the roots.

The berries were first cultivated at Cape Cod, but the counties of Cape May, Atlantic, Burlington and Ocean, in New Jersey, now produce more than half of all that reach the market. The Western market is supplied from an immense marsh at Berlin, Wis., and another near Lapeer, Mich., prepared on scientific principles. Cape Cod cranberries bring the highest price, being worth \$1 more a barrel than Jersey's.

In the districts where they are grown the cranberry-picking season is a bonanza to every man, woman or child. The pickers get 75 cents a bushel for picking the berries, receiving a ticket for each bushel, which is cashed at the end of the month. Two bushels a day is considered an average day's picking, but experts often gather five and sometimes seven bushels.

CREAM. The lighter portion of Milk which rises to the surface when it allowed to stand. In good, rich milk the proportion varies from one-fifth to one-third. Much of the cream is abstracted from milk sold to storekeepers by dairymen who supply cream to ice cream saloons, and butter to private families. The proportion of cream in the milk sold by different dealers is easily ascertained by filling a bottle or tube with each, and letting them stand undisturbed for over forty-eight hours, when the difference in color will clearly distinguish the cream from the milk, and show the relative proportion contained in each sample.

CREAMERY. An establishment for the manufacture of butter from cream, conducted on the same basis as a cheese factory, the farmers of the neighborhood supplying the cream, and the butter being made in larger quantities and with greater uniformity than is possible in the private dairy. The butter so made is sold and quoted as "creamery" or creameries. (*See butter*)

CREAM NUTS. See *Brazil Nuts*.

CREAM OF TARTAR Is obtained by refining the argol, (which see) found in the juice of grapes. It has an acid, cooling taste and is used in the preparation of summer drinks and as an aid in raising bread and cakes. It is almost universally largely adulterated, being sometimes not more than $\frac{1}{3}$ or $\frac{1}{4}$ pure cream of tartar. Most of the articles used to adulterate it being insoluble earths, it can be tested by boiling it in water 80 times its own bulk; if any sediment remains it is not pure. Its sale by grocers is much decreased by the very general use of baking powders.

Of late years the supply of foreign cream of tartar has considerably decreased owing to the very marked reduction of the wine crop, and tartar can only form to a paying extent in barrels which are left undisturbed for a period of years. There are usually from one to three inches of dark grounds found at the bottom of full barrels of new wine after they have stood long enough to settle, and about 25 per cent of tartar is naturally precipitated with these particles. After a certain time the dregs are removed in a cake, dried, and broken up till they are about the

size of common sand and of a pinkish tinge, like the "tailings" of a Nevada quartz mill. These dregs are sold to tartar manufacturers for about five dollars a bushel. They are put into huge vats of hot water and cooked for about two hours, when they are run off into shallow receivers around which the crystals soon begin to form in a thick mass. As the water always holds a certain quantity of the tartar in solution, it is never allowed to escape, but is used over again in the boilers and settlers, thereby preventing a loss which must recur as frequently as the water was drained off, and which would largely diminish the profits of the business. Tartar made from wine that has been cleared with plaster is richest in tartaric acid, while that formed in wine that is cleared with eggs is richest in cream tartar. The tartar takes a tinge of pink or cream, as the wine in which it forms is red or white.

CUCUMBERS Are sometime eaten raw but more generally used as pickles. Young cucumbers make especially delicate pickles, in which state they are known as *Gherkins*.

CURRANTS. Small, red, acid berries, eaten raw as a dessert, but more extensively made into pies and jellies. A fermented liquor, called *currant wine*, is made from them.

The *White Currant* is a variety of the common currant which has been produced by cultivation. They are less acid, and consequently more suitable for eating raw, but are not as desirable for cooking.

The dried currants which are imported in casks are really a small raisin, which is principally produced in the Grecian islands of Zante, Cephalonia and Ithica, and in the vicinity of Patras. The crop is a very uncertain one as it is easily ruined by rains at the time of gathering. They are much used by bakers and confectioners in cakes and puddings.

CURRY POWDER Or **CURRY PASTE.** Used extensively in India and other eastern countries, it is too highly seasoned to be valued in other countries. It is composed of black pepper, cayenne pepper and a variety of aromatic seeds, nutmeg, cinnamon, cloves, &c., made into a paste or powder with turmeric. Its

composition, like that of salads, varies with different makers.

CUSK. A fish similar to, and about the same size as the cod, to which, when salted and dried, it is considered rather superior.

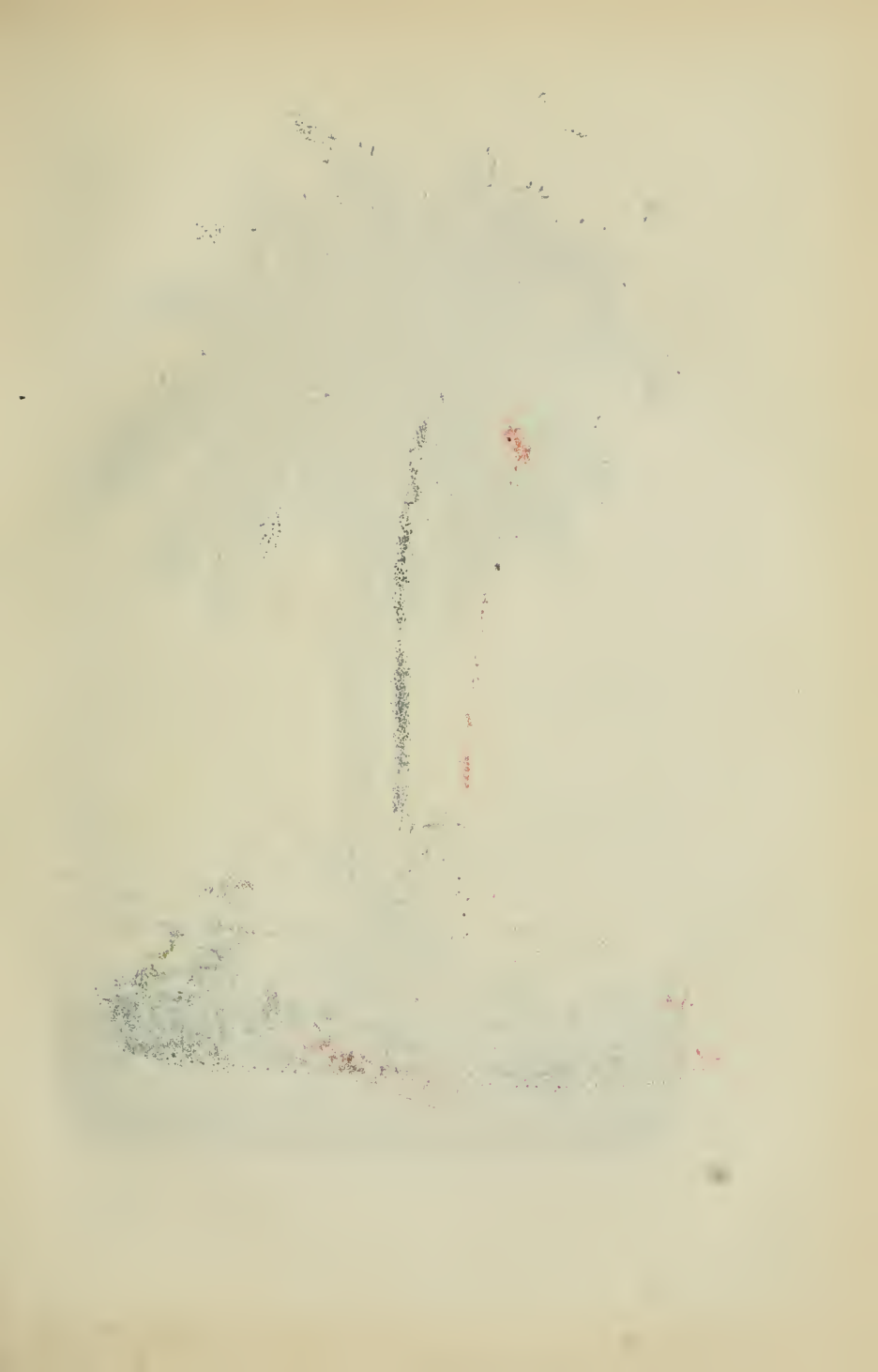
CUTTLE-FISH. As an article of commerce, is the bones of a sort of shell-fish, placed in bird cages for the birds to whet their bills upon. It is an article which all grocers should have in stock who keep bird food, etc., as it is a small and profitable item, and not liable to spoil. It is sometimes used in the preparation of tooth-powders, for polishing metals, and for various purposes in the arts.



DAIRY. Everything pertaining to milk and its management. So that the dairy may be the farm, or the milk-house, or even the store where the goods are sold. Milk and butter absorb very quickly any odors with which they come in contact, and dairies must be kept scrupulously clean. Owing to this necessity, the creamery and cheese factory system of the U. S. offers greater facilities for dairy work than the farm dairy, and is therefore rapidly superceding it.

DAMAGED GOODS. The liability of many goods to damage *en route* makes it important for the dealer to act cautiously in throwing the blame on the wholesaler or shipper. Nothing can be more unwise than to receive a shipment of goods by *freight* and return a damaged cheese by *express*, or to return an entire invoice because something in it is wrong. Write carefully and coolly to the shipper and, stating the particulars, say that such articles are held subject to his order, and expense and trouble will be saved to all concerned. Many goods, especially in winter, are sent at the risk of the party ordering them and it would be well to understand the whole ground before making claims. At all times just claims should be made *promptly*, but it is very dangerous to contract the reputation of making claims on trivial grounds.

DANDELION. The leaves of this plant, when bleached, make a good salad. The green leaves also are extensively used as greens in the spring, similarly to spinach. The roots are





DATE PALM.

sometimes roasted and ground and used as a substitute for coffee.

Dandelion coffee is a mixture of ordinary coffee and powdered dandelion root.

Dandelion chocolate is made by mixing one part of common chocolate with four parts of powdered dandelion root.

DATES. In Persia, Arabia and the northern part of Africa, the date palm forms the principal wealth of the natives, who use the wood and leaves in every imaginable way, and eat the date both fresh and dried, making almost it their only food. Large quantities are dried and pressed in frails and in this shape become an important article of commerce. Their size and quality differ greatly, depending not only upon where they were grown but also the manner in which they are dried and packed. They should be chosen large, softish, not much wrinkled, of a reddish yellow color on the outside with a whitish membrane between the flesh and the stone.

It is only the female tree which bears fruit, and in order to fertilize the ovary of this fruit the Arab climbs the trees in the month of April, when the flower is ready for fecundation, and inserts in every female spathe a portion of the pollen of the male flower. It is well worth to him, however, all the labor it costs. Although it does not begin bearing till eight years of age, it goes on till it is about two hundred, bearing yearly from 100 to 200 pounds of fruit in clusters of from 20 to 40 pounds. It affords the Arab not only shelter and food, but when it is past producing food a wine is made from its sap, its roots are used for fencing and roofing, and its leaves are made into mats, baskets, sacks and cord.

DEWBERRY. Is an early kind of *Blackberry* (which see).

DERMESTES. Commonly called the Bacon Beetle. The larva of this insect is very destructive to bacon and other dried meats and often also to cheese. It is a worm of a long shape tapering towards the tail, dark-brown above, white beneath, with long hairs and two horny hooks on the end of its body.



DEXTRINE, or "BRITISH GUM," is of immense value in the arts as a cement. It was discovered by accidental overheating of starch, and its process of manufacture was for a long time kept secret. Its chief use for a long time was in the cotton manufacture. It is the standard gum for postage stamps, though sometimes gum arabic and cheaper substitutes are used.

DISTILLATION. An important process consisting, of vaporizing a liquid by heat in one vessel and then conducting the vapor into another cool vessel, where it is condensed again into a liquid. The value of the process depends upon the fact that very few liquids become vapor at the same temperature. Ether will vaporize at about 95° ; alcohol, at 173° and water at 212° . Sea water in this way may be rendered drinkable, the hot water vaporizing and passing over into the condensing vessel while the salt is left behind. The principal use of this process, however, is in the preparation of intoxicating liquors.

DRAFTS. See *Bank*.

DRIED BEEF. See *Beef*.

Beef Shaver, a convenient form of knife for shaving dried beef in even slices with regularity, promptness and economy, is that manufactured by the Enterprise M'f'g Co. of Phila.

DUTCH STANDARD is now adopted in determining the value of sugar, thereby establishing a basis on which the customs on imported sugars are collected. It is simply a test of color and the standard qualities are generally arranged in sealed bottles of different degrees of color up to the number of fourteen. The polariscope (which see) is now recognized as the most accurate test of the value of sugars.

DRIED FRUITS. See *separate headings*, such as apples, peach, cherry, etc.; also "Alden process."

DYES are put up in convenient packets of Analines, for dyeing Easter Eggs, and the grocer will find it profitable to take them *on sale* before Easter.

EDAM CHEESE. (See *Cheese*.)

EGGS. Extensively employed in cake baking and general

cooking. Where used by themselves they form a very nutritious article of food. Eggs should not be allowed to lie too long on one side, as the yolk gradually sinks down through the white of the egg, and when it touches the shell, the egg quickly spoils. For this reason, in packing eggs they should be placed with the small end down. Packed in this manner, in sawdust or salt, they may be kept for some time without spoiling. Bad eggs float in water, thus affording an easy means of detecting them.

The average weight of twenty eggs laid by fowls of different breeds is two and one-eighth pounds. The breeds that lay the largest eggs, averaging seven to a pound, are Black Spanish, Houdans, La Fleches, and Creve Cœurs. Eggs of medium size and weight, averaging eight or nine to the pound, are laid by Leghorns, Cochins, Brahmins, Polands, Dorkings, Games, Sultans. Hamburgs lay about ten eggs to the pound. Thus there is a difference of three eggs in one pound weight. Hence it is claimed that in justice to the consumer eggs should be sold by weight.

How to Pack Eggs. Receivers have a good deal of trouble with eggs that come in loose packages, have not been properly packed, and arrive with more or less broken. When cases are not used, the barrel is the next best package. In packing, oats should not be used, because they are heavy and increase the cost of shipment, and the eggs are apt to work through, and coming in contact with one another, there is sure to be some breakage if great care is not taken. By using cut straw the eggs can be got through in good shape and are all in suitable condition for re-shipping, provided the proper rules have been followed. In using straw, see that it is clean and dry so that there will be no musty smell. The eggs should be laid with the ends toward the outside of the barrel. Between each layer of eggs there should be a thick layer of straw. See also that plenty of straw is placed between the eggs and sides of the barrel. A barrel, if properly packed, should not have more than about sixty or sixty-five dozen. When the package is filled, place considerable straw over the top, put

the head of the barrel in securely, and then mark the package plainly: Eggs, so many dozen; and all is complete, and a good condition is certain.

Preserving Eggs. According to a German paper, linseed oil is the very best substance with which to coat eggs to render the shells impervious to air. The experiment was as follows: Ten eggs were coated with linseed oil, ten with poppy-seed oil, and ten others were left uncovered, the weights all being ascertained. The thirty eggs were laid on sand, taking the precaution that no eggs touched one another. After from three to six months they were re-weighed and opened, with the following results: The unprotected eggs had, after three months, lost eleven per cent. in weight, and after six months, eighteen per cent. On opening them they were found only half full and quite spoiled. Those covered with poppy-seed oil had lost in three months three per cent., and in six months four and one half per cent.; on opening them they were found full and without bad smell. Those covered with linseed oil had lost, after three months, two per cent.; after six months, three per cent.; on being opened they were found full and smelling perfectly fresh and sweet.

Dessicated Eggs are prepared by extracting all the moisture from the egg, leaving a dry, mealy substance. This preparation answers all the purposes of fresh eggs in cooking and is not liable to spoil.

EGG CASES. Patent egg cases will be found to well repay the extra expense to shippers of eggs, by their superior advantages in holding the egg in position in packing, thus insuring safe transportation.

EGG PLANT. So named because the fruit, for which the plant is cultivated, is shaped somewhat like an egg. The fruit is of a rich, purple color, about the size of a man's head and prepared for the table by frying in slices, by baking and otherwise, being used in soups like the tomato by the French and Italian cooks.

ELEME. A Turkish word signifying hand-picked—as Eleme figs, hand-picked figs. See fig.

EXTRACTS OR ESSENCES. All the different varieties of flavoring essences are obtained by extracting the essential oils from different flowers, fruit and plants. The great expense in obtaining these essences is so great, and the price realized so high, the temptation to adulterate is rendered proportionately great, so much so that many professing to manufacture these flavors do nothing more than, after purchasing the pure oil, manufacture them by reducing the quality with the addition of various spirits. The flavors are obtained from the flowers, fruits, &c., either by expression, absorption distillation or maceration. The first method, that of expression, can only be adopted where the presence of the oil is very plentiful and easily obtained; the second, absorption, is the following method, adopted in the well-known flavor of vanilla: place $\frac{1}{3}$ pound of the pods, cut up small, in one gallon of pure alcohol of a strength known as 60 degrees one proof, shake frequently every day for the space of one month. The third, that of distillation, requires much chemical knowledge, and the erection of costly stills. The fourth method is that usually adopted to manufacture portrate and similar perfumery. Chemistry plays such a great part in the concoction of essences for trade purposes that many of them do not contain a semblance of the article under the name of which they are sold.

EXCHANGE. (*See Banking.*)

EVAPORATED GOODS. (*See Vegetables.*) Among the numerous devices which have come into use within the past few years, for the preservation of fruit, says the *N. E. Grocer*, none seems to be more successful than the process of drying apples by evaporation. The old-fashioned mode of drying apples in the sun has been largely superceded by the new process. At least we know that the sale of evaporated apples is rapidly increasing in this market, while the demand for the old quartered and sliced dried apples has almost entirely dropped off. Evaporated command $7\frac{1}{2}$ to 9 cents a pound, which is just about twice as much as old-fashioned dried apples are quoted at. In fact, it is difficult to find buyers for the latter at any price, and their sale is

now limited to small lots for the foreign market, where a very cheap article is wanted. The fruit is cut in thin, round slices and laid on trays, which are moved quickly through a vertical evaporator with heated flues by means of wheels and chains. The air in the flues is so regulated as to thoroughly dry the fruit while passing through without materially changing color, or allowing it to lose any of its natural qualities. The fruit is neatly packed in boxes and can be transported any distance in ordinary freight conveyances. One bushel of green apples will make from five to seven pounds when dried by evaporation. Peaches, berries, and several kinds of vegetables have been treated successfully by the evaporating process, which is destined to have an important influence on the preservation of all of our perishable products.

EXTRACT OF MEAT. A preparation of condensed beef-juices obtained by reducing the meat by a moderate heat in a vacuum pan, this leaving nothing but the stimulating properties. Leibig's Extract of Meat is the most generally used, but is, to many people, a very nauseous article, its taste and odor being quite offensive to a delicate palate. If a little butter, a piece of bread, and plenty of salt are put in the hot beef tea, this will be largely obviated. It is an erroneous idea which is generally prevailing, that Leibig's Extract is the manufacture of one firm which claim to be the representatives of the late Baron. No patent was ever claimed by the inventor, and all persons have a right to make it, although the name may be held as a trade-mark. Johnson's Fluid Beef is a better article, and is composed of the Extract of Beef and the Fibrine also: the Extract is stimulating, the Fibrine nutritious. Valentine's Meat Juice is a reliable preparation. Starr's Essence of Beef, (formerly known as the London Meat Essence Co.) is the most palatable article in the market.

FARINA. Properly the flour of any sort of corn, or starchy root, but now confined in the trade to designate the starch flour of corn, which is used to make puddings and desserts.

FAUCET. (See *self-measuring faucet*.)

FEME SOLE TRADER is the legal term applied to women

who secure a license to carry on business in their own name without liability for the debts of their husbands and without rendering their husbands liable for their own.

FIGS. Are brought in a dried state chiefly from India and the East. Of late years they been successfully cultivated in California. There are several varieties differing considerably in color and quality, some of the best of which are the brown Turkey, brown and white Ischia, and white Marseilles. The "Eleme" figs are hand picked Turkish figs, so named from the Turkish word, for hand-picked. The best qualities of figs are packed with a few bay leaves in the top of the box, to exclude insects. "Natural" figs are those not compressed in packing, and "pulled" figs are those made supple by kneading and then pressed into drums or boxes.

The fig consists of a pulp containing a number of seeds, enclosed in a rind. One thing most peculiar is that it has no visible flower, and the fruit arises immediately from the stem. As the fig enlarges a flower comes to maturity, in concealment, and in Eastern countries the fruit is much improved by a singular operation known as *caprification*. It is performed by suspending by means of threads over the cultivated fig, branches of the wild fig which contain innumerable small insects. When the insect develops its wings it leaves the wild fig and enters the cultivated one for the purpose of laying its eggs. By this it hastens the ripening and causes the nutritious juices to spread. When ripe they are mostly dried in ovens to preserve them. The fig tree yields three crops annually, but the winter yield is of little value.

FILBERTS. Are nuts much esteemed for the dessert, and are the fruit of the Hazel bush. The American hazel nut is smaller than the European.

FIRE-WORKS. Grocers and country dealers are often tempted by the prospective profit in fire-works to put them in stock about the 4th of July. They detract from the attention to the regular business of a store, are very dangerous in themselves and unless covered by payment of an extra premium in advance de-

stroy any policies of insurance that may stand on the stock or building. Laws are gaining ground against their use and every year it becomes more difficult and less profitable to handle them.

FISH (as food.) There is some danger, says the *Lancet*, of the fish question falling out of memory. This is not to be tolerated after the interest which has been excited, and for some time maintained, in connection with this important phase of the food problem. Whatever may be the nutritious value of fish as food—and we believe that to be very great—it must be evident that a full and cheap supply of fish would react so as to produce a lowering of the price of butchers' meat. This is manifest on the face of the facts; but what may not be equally apparent, though it is scarcely less noteworthy, is the consideration that nervous diseases and weaknesses increase in a country as the population comes to live on the flesh of the warm-blooded animals. This is a point to which attention has not been adequately directed. "Meat"—using that term in its popular sense—is highly stimulating, and supplies proportionally more exciting than actually nourishing pabulum to the nervous system. The meat-eater lives at high pressure, and is, or ought to be, a peculiarly active organism, like a predatory animal, always on the alert, walking rapidly, and consuming large quantities of oxygen, which are imperatively necessary for the disposal of his disassimilated material. In practice we find that the meat-eater does not live up to the level of his food, and as a consequence he cannot, or does not, take in enough oxygen to satisfy the exigencies of his mode of life. Thereupon follow many, if not most, of the ills to which highly-civilized and luxurious meat-eating classes are liable. This is a physiological view of the food question, and it has bearings on the question of fish supply which ought not to be neglected.

FLAVORS, OR FLAVORING EXTRACTS. (*See Extract.*)

FLORENCE OIL. A term sometimes used for Olive Oil, which see.

FLOUR. Grain of any kind ground to a dust, although the term is generally used as meaning more especially wheat dust.

It stands first of all other articles used in the line of food. It is an article of prime importance to the grocer, as the quality of flour which he furnishes has a direct effect on the growth of his family trade. Great care should therefore be taken to purchase reliable brands which can be constantly renewed in stock—which do not vary in quality. Flour is seldom adulterated. The rare cases which have been detected have shown potato starch, which involves very little profit to the mixer, and plaster which cannot be present in considerable quantities without being evident. Powdered soapstone, or mineral pulp, is sometimes used, and is said to be difficult of detection.

Flour is peculiarly sensitive to atmospheric influences, says the *American Miller*, hence it should never be stored in a room with sour liquids, nor where onions or fish are kept, nor any article that taints the air of the room in which it is stored. Any smell perceptible to the sense will be absorbed by the flour. Avoid damp cellars or lofts where a free circulation of air cannot be obtained. Keep in a cool, dry, airy room, and not exposed to a freezing temperature, nor to intense summer, or to artificial heat for any length of time above 70° to 75° Fahr. It should not come in contact with grain or other substances which are liable to heat. Flour should be sifted and the particles thoroughly disintegrated, and then warmed before baking. This treatment improves the color and baking properties of the dough. The sponge should be prepared for the oven as soon as the yeast has performed its mission, otherwise fermentation sets in and acidity results.

The following rules to test good flour are given by an old dealer: First, look at its color. If it is white, with a slightly yellow or straw-colored tint, it is a good sign. If it is very white with bluish cast or with small black specks in it, the flour is not good. Second, examine its adhesiveness. Wet and knead a little of it between the fingers; if it works dry and elastic it is good; if it works soft and sticky it is poor. Flour made from spring wheat is often sticky. Third, throw a little lump of dry

flour against a dry, smooth, perpendicular surface ; if it adheres in a lump, the flour has life in it ; if it falls like powder, it is bad. Fourth, squeeze some of the flour in your hand ; if it retains the shape given by the pressure, that, too, is a good sign. It is safe to buy flour that will stand all these tests, and they are simple. (See New Process and Self-Raising.)

FORECLOSURE. A law term employed to express a barring of the equity of redemption upon mortgages. For instance, a mortgage may, after the expiration of the time for receiving back the principal and interest due, either compel the sale of the estate or call upon the mortgagor to redeem it forthwith. In default he will be ever foreclosed, or, in other words, lose his equity of redemption without possibility of recall.

FREEZING. All fruits and nearly all liquids are very liable to be frost-bitten or frozen, and care should be taken in ordering them in cold weather, as such goods are generally sent at the risk of the party ordering.

FRUIT AUGURS are instruments for loosening such articles as prunes and dried fruits, when they have been too tightly packed.

FRUIT BUTTERS. As their name implies are preserves of fruits, made without retaining their form but having a consistency more like butter. They differ from jams in being less sweet and less firm. The trade generally buys them in large wooden pails, retailing them by the pound. Many inferior goods of this class are often made from damaged fruits and the lowest grades of molasses. The F. Butters put up by P. J. Ritter, Phila., N. Y., Conn., & Chicago, are standard in quality.

FRUIT PRESS. For making jelly, fruit juices &c., the strong and simple press manufactured by the Enterprise Mfg. Co., of Philadelphia is considered the best.

GAME. Any wild animal pursued or taken by a sportsman, such as rabbits, pheasant, etc.; is equally applicable to animals that have existed in a wild state but which now may be usually found domesticated. Below are the dates in the separate states when game may be lawfully killed :

Missouri—Deer, Sept. 1st. to Jan. 15th ; Prairie chicken, Aug. 15th to Feb. 1st. ; Quail and pheasant, Oct. 15th to Feb. 1st ; Woodcock, Jan. 15th to Jan. 10th ; Wild turkey, Sept. 15th to March 1st. Kansas—Deer and woodcock, Aug. 1st to March 1 ; Prairie chicken, Aug. 15th to Feb. 1st ; Quail and pheasant, Oct. 1st to Jan. 1st ; Wild turkey, Aug. 1st to March 1st. Illinois—Prairie chicken, August 15th to Dec. 1st. Quail and pheasant, Oct. 1st to Jan. 15th ; Woodcock, July 4th to Jan. 1st ; Wild turkey, Sept. 1st. to Jan. 15th, Snipe and other water fowl, Aug. 15th to May 1st. Iowa—Deer and wild turkey, Sept. 1st to Jan. 1st ; Prairie chicken, Aug. 15th to Dec. 1st ; Quail, Oct. 1st to Jan. 4th ; Pheasant, Sept. 12th to Dec. 15th ; Woodcock, July 1st to Jan. 1st. Pennsylvania—Ruffed grouse or pheasant, between December 20th and August 1st. Quail or Virginia partridge, between December 20th and October 1st. Wild turkey, between January 1st and October 1st. Fox squirrel or grey squirrel, or rabbit, between January 1st and August 1st. Woodcock, between November 15th and July 4th. Partridge or rabbit, in the counties of Montgomery and Delaware, between January 1st and November 1st. Woodcock, in the counties of Philadelphia and Delaware, between January 1st and August 15th ; English snipe, in the same counties, between April 20th and September 1st.

GARLIC is a weed very similar to the onion, which at certain seasons abounds in many pastures. It imparts a very strong rank flavor to the milk of cows who feed on it and to their butter. Some people do not object to this flavor, but to many it is extremely disagreeable. The main use in cookery is to flavor soups or stuffing for fowls.

GAUGE ROD, an instrument for measuring the quantity of liquid in any vessel such as a barrel or cask.

Gauging is the method of determining, by actual measurement, the capacity of any vessel or receptacle, as of a cask, barrel, or vat. The operation may be performed either by measuring the dimensions of such receptacle and then calculating its capacity

upon geometrical principles, or by means of a gauging-rod suitably adjusted for the purpose. The instrument usually employed is a diagonal rod, by which the contents of the cask are inferred from its diagonal length, measured from the bung-hole to the extremity of the opposite stave at the head. On one face of a square rule, generally about four feet long, a scale of inches is described for taking the measure of the diagonal, while a scale on the opposite face expresses the corresponding contents of the cask in gallons. Although only approximate results are given by this method, yet, by the aid of experience and the use of larger sliding-rules for calculation, it is quite possible to accurately measure the contents of casks which represent a given standard of form.

GALLON. A measure for dry or liquid goods containing 4 quarts. The United States standard gallon contains 23 cubic inches or equivalent to a cylinder 7 inches in diameter and 6 inches in height and is the same as the old English wine gallon. The beer gallon contains 282 cubic inches.

GARNISHEE. One in whose hands the property of another has been attached in a suit against the latter by a third person. Thus he is garnished or warned not to pay or deliver goods but to appear in court.

GAS. Carbonated hydrogen is the common gas used for illuminating, procured from coal by means of heat. See lamps.

GELATINE is made from various animal substances, but chiefly from the softer parts of the hides, etc., of cattle, by boiling them and treating them with steam. It is chiefly used in making jellies and jelly-like desserts. Great care should be taken to secure a strictly pure article, and this may be easily tested by pouring water upon the dry gelatine, when, if pure, the solution should be colorless and odorless. It is used in place of isinglass, (which see) being much cheaper. Gelatine does not furnish food sufficient to sustain life, although it was formerly supposed to be very nutritious.

GERMAN YEAST.—See *Compressed Yeast*.

GHERKINS are much esteemed pickles made from small, young cucumbers.

GIN is an alcoholic liquor distilled from barley and other grains and flavored with juniper berries, which is extensively used as a cheap common drink. It is largely made in Holland, and exported thence to other countries, especially to North America and Great Britain. It is probably more adulterated than any other liquor. Various adulterant flavorings are added to give it a stronger, more fiery taste.

GINGER, in its commercial form consists of the root stock of the ginger palm, which grows freely in moist places in all tropical climates. The root is gathered when the stalk withers and is immediately scalded in order to kill it and prevent sprouting, or else it is washed and scraped. The former preparation is applied generally to the oldest and most inferior root, and produces the black ginger, while the latter produces the white ginger of commerce. This white color is often heightened by a chemical process of bleaching which impairs the real value of the article. In China and India the ginger is boiled and cured in sugar, thus forming the much esteemed preserve known as Conserved or Canton ginger. The popular medicinal stimulant *Jamaica Ginger*, is an alcoholic extract of the ginger root. Numerous other preparations and decoctions are made from it, such as "Ginger Tea," "Ginger Beer," etc.

GLUCOSE. Many ignorant people regard this addition to our sugar supply with more dread than should be, from the fact that they consider it as an injurious adulteration. This is a great mistake, for glucose is simply the name of the sugar obtained from starch instead of from the cane. There is no doubt of its inferiority for sweetening purposes to that of cane sugar, and there is also no doubt but that it is used as a means of adulterating or, more correctly, reducing the quality of sugar. The growth of the manufacture has been of late years very extensive. It is manufactured from starch in the following way: A mixture of starch and water at a temperature of 130 degrees is allowed to

flow gradually into a large vat containing water with the addition of about one per cent. of sulphuric acid, and kept at boiling point. In about half an hour the starch is converted into sugar. The liquid is drawn off, and the acid is then neutralized by the addition of chalk. The molasses is then drained off, and the sugar is dried in a gentle heat by a current of air. Is more or less used in the manufacture of all confectionery, also in brewing ale and beer, distilling spirits, brandy and wine. Its use is perfectly harmless.

GLUE is obtained from the hides and hoofs of oxen and other similar materials. Almost all kind of animal matter will yield it, and accordingly all kinds of animal refuse are made use of in its manufacture. There are several varieties of it. "White" glue is apt to be considered a stronger and superior article, but for practical use nothing has been found so strong and adhesive as the clear, dark, "cologne" glue. The white glue is, however, preferred for some special purposes, such as joining light woods, etc., where a light color is of more importance than extra strength. Good glue is semi-transparent, deep brown and free from spots and clouds.

GLUTEN. The nutritious parts of wheat and other grains. The claim made for most prepared wheat foods, especially for infants, is that they are pure gluten and free from the starch of the grain, but the contrary is generally true.

GOOD WILL. In purchasing or selling a store a good rule for estimating is to allow one-half to two-thirds of their original cost for fixtures, and take the net profits of the previous year or six months as the value of the good-will.

GOOSE-BERRY. Grown in any garden soil, is much used for making preserves and jellies, and sometimes in making wine and vinegar. Its main use, however, is in the green state, when its peculiar tartness makes it palatable in pies or tarts, which latter name doubtless originated from its use in that way.

GRACE, *Days of* Three days are generally allowed after the date at which a note falls due, in which the maker may pay

it. Banks in calculating discounts include the days of grace and the day on which the note is made or 34 days on a thirty days' note. In some states all drafts, even those drawn at sight, are subject to this allowance of three days. In Pennsylvania and New York sight drafts have no days of grace. In Mass. they have.

GRAIN. A single small, hard seed such as a grain of corn or wheat, hence taken to express the whole class of eatable seeds. It also applies to the parts composing any bulk substance such as a grain of sugar. *Grain*, the smallest weight used. Seven thousand of such grains are required to make one pound avoirdupois.

GRAMME represents the French unit of weight, being equivalent to 15.4325 grains troy or about 12.23 of a dram avoirdupois. Its weight in distilled water at the temperature of maximum density 4° C. or 39.2° F. is a cubic centimetre. A kilogramme or 1,000 gramme equals 2.6793 lbs. troy, or 2.2046 lbs. avoirdupois, often accepted as 1 cwt. with 1.000 kilogrammes to the ton, allowing for a slight deficiency.

GRAPE. Fruit of the vine of many various species, both American and European. The fruit is largely consumed as it ripens, and also in making wines and raisins. The dried currants of commerce are a small grape peculiar to the Islands of Greece. California grapes are now the finest in our markets, and vine culture is spreading all over the United States.

"Grapes are the only kind of fruit which is plentiful and cheap during times of extraordinary drouth. A wet season is what the grape grower fears. In dry weather the vines bear abundantly, and the fruit is large and well-flavored. In California, where not a cloud is seen in the sky from May till October, the grape reaches its greatest perfection, and many kinds unknown to our Eastern markets are cultivated from stocks brought from Europe. There is not much variety with us. The growers believe it most profitable to make no experiments, and stick to the standard sorts with which the public is familiar. Upon our city fruit stands and in

our markets the Concord appears first and stays the longest. Early in the season it has the Delaware for a rival, but this delicious little grape, with its red coat and its delicate aromatic flavor, is not a prolific bearer, and it sells for about twice the price of the Concord. Later comes the Catawba, an excellent grape, but one too often picked before its best qualities have developed. Besides these three varieties there is rarely anything to be seen save the California grapes, which come 3,000 miles by rail, and are too costly for general sale. Numerous varieties are to be found in private vineyards that are seldom seen in the cities, because the men who make a business of raising grapes have found by experience that it pays best to stick to the kinds that are hardy and prolific, and that buyers do not need to be made acquainted with. The quantity of grapes consumed annually for food in this country is enormous; yet one need not be very old to remember when a bunch of grapes was a rarity save upon the tables of the rich. How much has been done for American health, and thus indirectly for American civilization, by the cheapening and popularizing of the small fruits during the past thirty years can hardly be estimated. Best of them all is the grape. It appeals to the æsthetic taste as well as to the palate; it is grateful to the eye as well as to the stomach, and at four or five cents a pound, is within reach of the leanest purse."

GRIST. Wheat flour divested of the coarse bran or pellicle.

GREASE. A name of general application to all fatty or oily substances, but more especially to those having some degree of solidity, as tallow. It is employed to a great extent as a lubricant for machinery and wagon wheels. The most inferior quality mixed with tar and other substances is employed for axle-grease (which see).

GREEN FRUIT. Many grocers consider it advantageous to add green fruit to their general stock, says the *London Grocer*, and the public begin to find out that they can purchase from the grocer at a cheaper rate than from the fruit merchant. In these times, when the grocer is beset on every side by opposition from

“stores” and “wholesale retailers,” etc., it behooves them to look around for fresh articles for sale whereby they may recoup their losses. To those who have not already done so, we would say: Add the green fruit business to your trade, and we are of opinion that you will not have cause to regret it, provided the business be conducted with care and discrimination, and only such articles purchased as are found to be in demand in their respective localities.

GRITS. A name used to designate any of several varieties of grain used in cooking, such as Hominy Grits, Wheaten Grits, Oaten Grits, etc., etc. The trade can obtain them in pound packages, which are very convenient. They are generally used as a breakfast dish, but during the winter some families use them for supper.

GROATS are the grain of wheat, oats and barley deprived of the outer coating, and are used for preparing gruel for invalids, and at times used in broths and soups.

GROCER. Formerly written *Grosser*, meaning one who sells by the *Gross*, that deals by wholesale. And now it is said that they all retail, although some are called wholesalers out of courtesy! See Index under head “What is a grocer, papa?”

GRUYERE. A Swiss cheese which is highly flavored with *Melalitus Officinalis*. See cheese.

GUANO known to the ancient Peruvians as a valuable manure, is composed of the excrement of sea fowl intermixed with their decomposed bodies and eggs, also the remains of seals, is principally found in large accumulations upon the coasts of Africa and South America, and many of the Pacific Islands. Attention was first called to guano by Humboldt in 1804, while Sir Humphrey Davy referred to its fertilizing powers for farming purposes in 1810. Its chemical composition is uncertain, its value, however, allowing for vicissitudes of climate and atmospheric alternations, depending chiefly upon the phosphates of lime, ammonia and soda which it contains. Its commercial importance has long been acknowledged.



GUAVA. The guava tree, of which there are about 100 species, grows abundantly in tropical America and the West Indies. The fruit of the guava is delicious when fresh, and is largely in demand when made into jelly. Guavas are a bright yellow color and very fragrant. It is now cultivated in Florida, and small lots of jelly from that State have appeared in our Northern markets, which were quickly taken.

GUINEA PEPPER. A term used for cayenne pepper (which see).

GUILDS have existed from an early period and flourished among the early English Saxons in the shape either of a mutual aid society or more likely an association to meet the expenses of what was formerly known as the frank-pledge system. Their importance was only equalled by their substantiability, whether religious, commercial or otherwise. Their membership conferred unquestioned privileges especially in London and some parts of Scotland. Since 1835, however, many of their privileges have been abolished by the freedom extended to manufacturing and trade. The Great Dutch Trading Guilds carried their commercial ventures over the entire globe, and still exist in China, Japan and the Pacific.

GUM. An exudation from trees and plants, which dissolves in water, forming a transparent mucilage, and is insoluble in alcohol, ether and oils. It is extensively used in the arts, manufactures and in medicines. The common gums are G. Arabic, G. Tragacanth, etc., used in making adhesive pastes. Dextrine (which see) is used very extensively as a substitute for gum in making gummed papers or mucilage.

Chewing Gum. The original article formerly sold in the stores was spruce gum, but pure white paraffine wax, variously flavored, has of late years taken its place very generally. The silly habit has created a great trade in this article.

GUMBO or *OKRA*. A West Indian plant, although largely cultivated in the Southern States and in warm countries generally. Its mucilaginous pods are excellent in soup, and are sometimes served up with pickles or butter. The seed, known as "ambrette," is much used by perfumers.

GUNNY BAGS are made of a strong fibre which grows in India, and much used for making mats, sacks, and for all kinds of packing.

GUNPOWDER. An explosive mixture composed of 10 parts sulphur, 75 of nitre and 15 of charcoal. Its chief use is the discharge of projectiles from firearms, and in blasting. A special license is required to sell it, which may be obtained. Insurance is also affected by keeping it on the premises, and an additional premium should be paid in order to cover the property in case of fire.

HAMS. See *Pork*.

HAY. The blades of grasses and the stems and leaves of other plants that are dried for fodder for cattle. Throughout England the hay harvest is as important as the corn harvest. In Scotland little grass is converted into hay; the crop consists mainly of clover and rye grass. The hay crop of the United States is enormous, and according to the census of 1860 amounted to 19,083,896 tons. Pennsylvania raised 2,245,413 tons, New York 3,564,793, Illinois 1,774,554 and Ohio 1,464,502. In 1868 the crop was estimated at 26,141,000 tons, the product of 21,541,573 acres, and valued at \$351,941,930.

HEAD CHEESE. Made of parts of the head and feet of swine, cut up fine and pressed into the form of a cheese. Is also called hog's head cheese.

HEAD or *FANCY RICE*. See *Rice*.

HEMP is the name used to designate the fibre of the inner bark of the *Cannabis Sativa*, and is extensively used in the manufacture of cordage. It applies also to the plant fibres of manila, jute, etc.; is a native of India, though produced in the United States and various parts of Europe, especially Russia. English

hemp is used extensively in the construction of coarse sheeting and shirting and a toweling cloth called huckaback.

HERBS (dried) are used for flavoring soups and making herb or medicinal teas, and various other purposes. They are largely prepared by such farming communities as the Shakers, the Oneida Settlement, etc.

HERMETICAL SEALING. A can or other vessel when closed and sealed against the possible admission of air, is hermetically sealed.

HERRING. There are several species of this favorite and



much used fish, the chief being the *Charengus* of Northern Europe and America, and the *Cmirabilis* of the

Pacific coast of the United States. The American herring fisheries are located along the New England coasts and also in British American waters. In Europe the principal herring grounds are those of Great Britain, Ireland, Scandinavia, the Netherlands and the North of France. They are usually caught in gill nets or scobop nets, their annual catch amounting to many hundreds of millions. Herring may be eaten fresh but are more generally smoked, fried or pickled; but in whatever form prepared are a most important and universal element of food. Boneless herring prepared for the broiler and packed in boxes with glass tops, is now a quick-selling article in a grocer's stock.

HICKORY-NUT. The shell is thin but hard, and the kernel sweet. The Shellbark variety is the best, and is found in all parts of the United States, its nuts being thinner shelled, and whiter than the Western hickory, which bears nuts often two inches long, and with very thick shells.

HOMINY. Is grains of Indian corn broken and with the hull removed; and is prepared for use by boiling with water. The larger sizes are eaten as a dinner vegetable, the finer product as a breakfast dish.

HONEY. Secreted by the glands of flowers, is extracted by the proboscis of the working bees, and passed into their crop or

honey bag. Arriving at the hive the bee disgorges the honey into the cells of the comb. It is used as food by the bees as well as by man. The composition of honey varies according to the food of the bees, their age, the season, etc. The wild honey of Cuba and the West Indies is highly aromatic, that known as Clover honey is generally less so. Our main supplies now come from California, where bee keeping is conducted on a large scale, unless we give due credit to the manufacturers of Glucose, who have unquestionably the advantage of their little rivals. Glucose being almost an exact equivalent of honey, can be mixed with it without risk of detection, and when properly made is just as wholesome. From the remotest times honey has been employed as food. In moderation it is nutritive and laxative, but dyspeptic persons have found that it aggravates their symptoms. Cases are on record where poisonous honey has produced temporary madness in consequence of bees extracting honey from poisonous plants.

HOPS. The hop plant is found wild in America, Europe and



Asia, and has been cultivated in Germany since the 9th century. It is largely cultivated in the United States, principally in portions of New York and Wisconsin. Its qualities of preserving beer from fermentation, and imparting an agreeable bitter taste to it, are proverbial. Medicinally valuable as a sedative and narcotic, whether taken internally or applied externally

by pillows, fomentations, etc.

HOREHOUND. A plant from the south of Europe and the East, about a foot high, bushy, with round wrinkled leaves. It has an aromatic but not very agreeable smell. The syrup is candied, and has become a very popular and effective remedy for coughs and other affections.

HORSE RADISH. A plant having roots of great pungency.

It grows in damp meadows in the middle and south of Europe, is naturalized in most places of the United States. It is cultivated for its roots, which are scraped and grated, and then mixed with salads or used as a condiment with meats. It is also used in medicine as a stimulant and as promoting digestion. Difficulty is experienced in endeavoring to eradicate it from ground in which it has been planted, as nearly every part of the root will grow. It is packed in bottles for the trade.

HUCKLEBERRY. An edible berry, varying in size from currants to small grapes, and in color from light blue to black. They ripen from the first of June to the last of August, are picked in enormous quantities and used as dressed fruit, and for pies and puddings. They are very little cultivated, but grow wild, generally in mountainous regions.

HUMBUGS. The trade is perpetually annoyed by humbugs. We warn grocers against all preparations for preserving perishable articles, all schemes for mixing goods so as to cheat the buyer, and especially against goods which pretend to grade with the best, and are offered at the lowest figures. Shot that is not round: honey—two-thirds glucose, and “independent” papers that print a wholesaler’s grocery price-list, are fair samples of humbugs.

ICE. Water solidified by cold. The color of pure ice is deep blue, which is only discernible, however, when it is seen in large quantities, as in glaciers. The hardness and strength of it increases in accordance with the degree of cold. It is now made artificially in all warm climates.

INDIAN MEAL. Flour ground from Indian corn, and derives its name therefrom. It is extensively used in making corn bread or Johnny cakes, and in form of mush or hasty pudding.

INDIGO. A vegetable dye stuff of much value. It is used in the manufacture of inks and for laundry purposes. The best quality will float upon water, is glossy, and when rubbed by the nail produces a purple-red streak. When the streak is dull and wrinkles the quality is poor. Good Indigo may be known by its

lightness, which indicates its freedom from earthy impurities, by its not parting from its coloring matter readily when tested by drawing a streak with it on a white surface, but above all by the purity of the color itself. Indigo is insoluble in water until it is treated with sulphuric acid, when it becomes the Indigo Blue used in the laundry.

INK The composition of the ink used by the ancients is not well understood, but it is believed that their ink excelled ours in blackness and durability. The necessary parts of ordinary black ink are gall, sulphate of iron (known generally as green vitriol or green copperas) and gum. The gum is added that the coloring matter may be retained, and to prevent the mixture from being too fluid.

INSECTS of various sorts trouble the grocer, and great care should be taken to keep stores free from them, as they destroy stock and drive away customers at the same time. Cleanliness is the best prevention. Persian Insect Powder is cheap and effective for many of them, and Borax will keep off ants and other small classes. But without scrupulous cleanliness no permanent relief can be expected.

INSURANCE. No dealer deserves credit who does not keep his goods insured. Every careful dealer will be as certain to keep up his insurance as he is to lock up his store, and will avoid keeping oils, alcohol, gunpowder or matches on the premises in larger quantities than are permitted by his policy without making special provisions, and paying the extra premium.



IRISH MOSS. A marine plant brought from Ireland which is used as a basis for jellied puddings and mould custards.

ISINGLASS is really a gelatine prepared from the swim-bladder of the sturgeon or cod. The best is that brought from Russia, where great quantities are made from the fish from the North Sea and the Caspian. It dissolves readily in boiling

water, and is extremely useful in the preparation of jellies, blanch-mange, gum-drops and various articles of confectionery. Fish glues or the coarser kinds of Isinglass are employed in different cements and sticking plasters. It is also used to clear coffee. Japanese Isinglass is prepared from a seaweed. Russia, Brazil and the United States furnish the greater portions of commercial Isinglass. Gelatine is generally superseding it in cookery on account of its lower price.

JAM. Preserves made by boiling fruits together with water and sugar, and generally understood to be done without regard to the preservation of the shape of the fruit, in which way it is different from preserved fruits, which retain in some measure their original form, and from jellies, which are made more solid.

JAMAICA PEPPER. *See Allspice.*

JARS. Glass or earthenware receptacles for holding or containing liquids or preserves. The ordinary glass preserving jars should be put in stock by the grocer about the middle of May, before the early berries arrive. They continue in demand until all the fresh fruits are out of market.

JELLY. Juice of fruits or meats, boiled and thickened to a consistency between fluid and solid. Jelly is made from nearly all fruits, and is put on the market in many forms but generally in glass tumblers. Currant appears to be the popular flavor. Jellies are often made by using the cheapest substances to thicken them and the addition of just enough sugar and fruit to give them a palatable taste.

JERUSALEM ARTICHOKE. The tubers of a species of sunflower, similar in appearance to potatoes, they have a sweetish taste when boiled, are watery and not as nourishing as potatoes. They are, however, quite palatable when properly prepared, and make excellent soup. They are usually pickled or eaten with vinegar.

JORDAN ALMONDS. The best grade of sweet almonds, of a long shape, grown at Malaga and other Spanish ports (see almonds.)

JUTE. The material from which twine, bagging, mats, etc., are made. All the sugar and rice, the pepper, ginger, cinnamon, gums, dye stuffs and many other commodities of Indian produce come to us in gunny-bags made from jute.

KALE or *BORECOLE.* A kind of cabbage differing from the ordinary in the open heads of leaves, used for culinary purposes as *Greens*, and as food for cattle. Some are of a green and others of a red-brown or purple color. Some leaves are plain and others are waved or curled. Mostly they are biennial, like cabbage, and some may be reckoned perennial. The more the leaves are curled the better. The mode of cultivation is similar to that of cabbage.

KEG. A small barrel or cask. Coopers in various parts of the country have long made five gallon kegs which hold but $4\frac{1}{2}$ gallons, in order to avoid the local or state taxes on sales of liquor in quantities of five gallons or over. Manufacturers of many articles have put them up in short packages, and it is no longer safe to accept kegs as 5, 10 or 20 gallons without gauging them to see how much they hold.

KIRSCHWASSER. A German spirituous liquor made from small black cherries. When distilled with the fruit itself, the kernels give it a special flavor.

KIPPERED HERRING. Common herrings carefully cleaned, dried and smoked.

LABELS. Every year improves the grade of the labels on all kinds of grocers' shelf goods, and by a judicious purchase of suitable packages, and a good arrangement on the shelves, the appearance of a store can be very much improved. Some standard goods are put up under very plain labels, generally the original ones under which they were first sold, but poor labels, and especially slovenly-looking ones, generally indicate equal neglect in putting up the contents.

LAMPS. Receptacles in which oil is burned by means of a wick, and used as an illuminating power. There was a time when lamps seemed destined to be entirely superseded by gas,

but recently, in consequence of the high charge for gas and the great improvement in kerosene and in the lamps themselves they have again come into favor and are used to a noticeably large extent. The Argand lamp, which was invented nearly one hundred years ago, was the first great novelty in principle, and consists of a circular wick through which a current of air passes. Grocers who use them for lighting their stores should have the best and keep them in the very best condition, as no stock needs as much light as the grocer's. But a decided improvement on lamps would be to close the store earlier and so dispense with their use, which would be more generally done if the expense of light, heat and time was accurately compared with the small sales made after seven o'clock.

Why Lamps Explode. An exchange says all explosions of petroleum lamps are caused by the vapor or gas that collects in the space above the oil. Of course, the lamp contains no gas, but immediately on lighting the lamp consumption of oil begins, soon leaving a space for gas, which commences to form as the lamp warms up, and after burning a short time sufficient gas will accumulate to cause an explosion. The gas in a lamp will explode only when ignited. In this respect it is like gunpowder. Cheap or inferior oil is always the most dangerous. The flame is communicated to the gas in the following manner: The wick-tube in the lamp-burner is made larger than the wick which is to pass through it. It would not do to have the wick work tightly in the burner; on the contrary, it is essential that it move up and down with perfect ease. In this way it is unavoidable that space in the tube is left along the side of the wick sufficient for the flame from the burner to pass down into the lamp and explode the gas. Many things occur to cause the flame to pass down the wick and explode the lamp: 1. A lamp may be standing on the table or mantel, and a slight puff of air from the open window or door may cause an explosion. 2. A lamp may be taken up quickly from a table or mantel and instantly explode. 3. A lamp is taken into an entry where there is a draught, or out of doors, and an explo-

sion ensues. 4. A lighted lamp is taken up a flight of stairs, or raised quickly to place it on the mantel, resulting in an explosion. In these instances the mischief is done by the air movement, either by suddenly checking the draught or forcing air down a chimney against the flame. 5. Blowing down the chimney to extinguish the lamp is a frequent cause of explosion. 6. Lamp explosions have been caused by using a chimney broken off at the top or one that has a piece broken out, whereby the draught is variable and the flame unsteady. 7. Sometimes a thoughtless person puts a small-sized wick in a large burner, thus leaving considerable space along the edges of the wick. 8. An old burner, with its air-draughts closed up, which rightfully should be thrown away, is sometimes continued in use, and the final result is a disastrous explosion.

LAMP-WICK. Strips made of cotton for use in lamps, as the part that is lighted and burns to give light in conjunction with the oil. They are bought by the dealer by the gross, and generally retailed by the piece.

LAMPBLACK. Soot that is produced by burning resin, turpentine, pitch, oil, or other substances in a way that volumes of smoke are formed and collected in receptacles. Lampblack is used principally in the manufacture of paints, blacking, and marking inks. Its quality depends upon its lightness and the intensity of its color.

LARD. The oily part of hogs' fat gathered from the tissue by boiling or rendering. Tallow stearine, mutton suet, potato flour, starch and lime are used to adulterate it, so as to make it more firm. Alum is added to increase its whiteness. Water is also used, and often as much as 12 per cent. It is put up in kegs, barrels and tierces, and also in small cans of several pounds weight. Pure lard should be pure and white, and free from taste or smell.

The following is a simple test for water in lard: Take a clean glass bottle, fill it with the lard about to be tested (leaving out the cork). Place this bottle about six inches from the fire, allowing

the lard to slowly melt, being careful not to allow it to boil, the water will sink to the bottom, and the lard rise to the top, thus you can see how much water is in the fraudulent article. Should the lard not settle clear it is evidence that it is also adulterated with alkali, thus making soap of it.

New tierces will soak from 2 to 3 lbs. when filled with hot lard, and if they weigh over that amount claim should be made on them. Frequently honest packers have trouble with tares. There have been instances where the heads have been changed and consequently the weights would differ. It is well to have the weight marked on both the side and cover, or head and bilge. The quality of lard differs very much with different houses.

LARD CHEESE. The skimmed milk is poured into a large cheese-vat, says the *N. Y. Grocer*, and thoroughly mixed with the buttermilk, which has just been drained from the butter. Three hundred pounds of fresh milk are then poured into a large tin bucket, beside which is another tin bucket of the same size, containing one hundred pounds of snow white lard that has undergone a steam-refining process which removes its natural odor and renders it pure and tasteless.

The lard and the milk in these two receptacles are heated to a temperature of 135° Fahr., and then, by means of a faucet at the bottom of each bucket, these liquids are drawn off into a common funnel and together enter a small opening in what is known as the "mixing-machine." The principal part of this machine consists of an iron case fifteen inches in length and seven inches in diameter, within which a closely fitting iron cylinder, cut round with screw threads and 50,000 teeth, revolves at a rapidity of 4,000 revolutions per minute. The heated milk and lard enters the machine at the bottom and flows out of an aperture in the top—a perfect emulsion. This mixture, which is two parts milk and one part lard, is then added to the buttermilk and skimmed milk which were previously stirred together in the cheese-vat. This composition is then heated to a temperature of about 100° Fahr., the rennet added, and the whole allowed to stand about forty min-

utes, when it coagulates. The curd is then chopped, salted, drained, and pressed so as to consolidate the caseine which is mingled with the lard, and expel the whey or serum of the milk. The pressure to which the cheese is subjected is very great. About thirty days are occupied in curing these cheeses, during which time they are turned over every twenty-four hours.

LARD-OIL. Much of this oil is exported, and is used in adulterating olive oil, which is then returned to us as pure olive oil. It is also found to be a valuable lubricant for machinery. Good lard oil is a pale-yellowish or nearly colorless oily liquid, of a slightly fatty odor and a bland taste. It becomes opaque at or below 32° Fahr. Any mineral oil present can be detected by the failure of the latter to form soap. Admixture of cotton-seed oil to lard oil is not readily detected, if the cotton-seed oil was refined and very pale. Any deep-colored lard oil, or one having a pronounced yellow tint would be suspicious. There are no reliable chemical tests either to distinguish the two oils or to prove the presence of both in one mixture.

LEAKAGE. An opening or defect which allows a substance to waste or pass out. Allowance is made for leakage only when it can be proved that the goods were not shipped in good condition.

LEASE. Is a legal instrument or contract between landlord and tenant, which gives the tenant the sole and exclusive right to possession of property leased during a specified term. There are a number of different kinds of leases, such as the improving lease, by which the tenant agrees to keep the property in repair. They are made for any desired length of time. It is advisable to have a lease clearly and comprehensibly written, so that it may be thoroughly understood by both landlord and tenant. A lease is binding only for those agreements which it sets forth, and nothing can be understood or taken for granted, except that a tenant is allowed to sub-let or put the property to any honorable use; and the lessee is responsible for rent. Each lease has its own peculiar details. The landlord is known as the lessor and the tenant as the lessee.

If nothing specially is agreed as to time of payment of rent, it is due only at the end of the year; but there is generally some express agreement. Always insert that in case of destruction by fire the rent shall cease, or you may be held for the rent while the building is being re-built or even if it lies in ashes.

LEMON. By many botanists this tree has been regarded as a variety of the citron, and, like it, a native of the north of India. The leaves are oblong, pale green, with a winged stalk; the flowers are streaked and reddish on the outside; the fruit is oblong, wrinkled or furrowed, pale yellow, and generally with concave oil-cysts in the rind. The pulp of the fruit abounds in citric acid. There is, however, a variety occasionally cultivated in the south of Europe of which the juice is sweet.

The acid juice of the common kind is largely used in preparing the beverage known as lemonade. It is also used in calico printing and as a flavoring extract, and as a preventive for sea-scurvy it is well known. For these uses lime juice is often substituted, as it comes in such convenient form in bottles.

Lemons vary very much in size, and the ordinary boxes contain from 240 to 420 lemons each; the brands L and LL being used to designate sizes, single L's being the largest.

They are wrapped separately in order to prevent decay by crushing together. Thin-skinned lemons are the juiciest.

LEMON-PEEL. The rind or outside skin of the lemon, which is put to many uses. By rasping and pressure an oil is extracted from the peel, which is put up in cans and is used largely in cookery and confectionery. The peel is also put to use by preserving in sugar in the same manner as citron.

LEMONADE. A beverage made from the lemon and for the purpose of allaying the thirst. It is also used for medicinal purposes, when it is made either hot or cold, according to the complaint. The venders of lemonade use citric or tartaric acid, or even a few drops of sulphuric acid, to make their mixture, and only slice a few lemons to float on top and please the eye. Most of the lemonade powders, declared to be pure, are made in a

parallel way. Reliable brands of lime juice are preferable, unless the fresh fruit is at hand.

LETTUCE. A plant having small flowers, a leafy stem and oblong leaves. It is obtained in good condition during the whole summer, and is generally eaten with vinegar and oil, as a salad. It is forced under glass by our market gardeners, and is extensively used in many salads, such as lobster, crab, etc.

LICENSE. An inland revenue tax upon certain traders who deal in various articles requiring the license of the government or city, such as wines, etc.; for wines and liquors they are as follows: Retailing, \$25 per annum; wholesaling, \$200 (See Tobacco).

LIQUORICE. The black mass which comes on the market in rolls is the boiled juice of the liquorice plant which grows in all parts of the world. It is most commonly done up in sticks, is dry and brittle, and to be soluble in water it should be pure. It is adulterated to such an extent that the pure article is scarce. A mixture of a little of the juice with the poorest kind of gum arabic, starch and flour, is what is generally put on the market for liquorice. Its principal use is in medicine, and it is extensively used in the manufacture of tobacco and liquors, especially to give color and flavor to porter and brown stout.

Liquorice Paste is an inferior article, generally coming from Turkey.

LIMA BEAN, See *Bean*.

LIMBURGER CHEESE. Thousands of tons of Limburger are now produced every season, mostly in the States of New York and Wisconsin, says the *Commercial Bulletin*, at a cost of less than half of the imported article. It is consumed mostly by our German-American population. The process of manufacture in its first stages does not differ from the usual way, except that a lower temperature is kept while the curd is forming, the animal heat alone in summer being often high enough. Great care is taken to use pure milk, free from taint or filth, and cleanliness is requisite in every stage of the making. Upon the curd being

formed, it is slowly and carefully cut into squares, pieces the size of dice, low temperature and careful handling being necessary to avoid breaking the butter globules, upon which the richness of the cheese depends. It is slightly scalded and stirred, most of the whey drawn off, and without being salted, the curd is dipped out into perforated wooden boxes or molds, about five inches square, and left to drain without any pressure being applied. In a few hours the packages are carried into the curing cellar and placed edgeways on shelves, like bricks set to dry. Every day thereafter they are rolled in salt and replaced when they have absorbed enough salt. They are turned almost every day, and the slimy moisture which exudes is rubbed with the hand evenly over the surface, which serves the double purpose of keeping the cheese moist and to close all cracks into which flies might lay their eggs. This outside moisture decomposes while the cheese ripens, and being mostly composed of albumen, like fresh meats, eggs, etc., the same results follow the decomposition, and in this case the Limburger odor is developed, which never forsakes it and sticks closer than a brother to all who touch or eat it. After eight to ten weeks it is packed in paper and tinfoil, and it is ready for market—in consistence, contents and nourishment the richest cheese that can be made, but to the uninitiated a malicious and premeditated outrage upon the organ of smell.

LIME. Pure, it is a white, brittle substance, and is increased in bulk by the addition of water, when the two enter into combination; and if the water is not in excess, a great heat is obtained. It is doubly as soluble in cold as it is in boiling water. Its chief use is in mortars and cements, though it is also employed for manure, purification of coal gas, in tanning, and for numerous medicinal uses and laboratory processes.

LIME. A fruit of the orange species, grown abundantly in the West Indies, in India, and in some parts of Europe. Smaller than the lemon (about $1\frac{1}{2}$ inches in diameter and almost globular), it has a very thin skin and an abundant juice, which makes its relative value much greater than its comparative size would indi-

cate. Its juice is also stronger and has an aromatic flavor. Lime fruit juice has long been regarded as a most useful medicinal agent. In gout, rheumatism, and the like, it has been largely prescribed as an article of daily diet, and with most beneficial results. It is, however, as an anti-scorbutic that it stands pre-eminent, and, unlike many other remedial agents, has stood the test of centuries, no other article having been found of like value. Prof. Doremus says: "It is not only a delicious beverage, commending itself to our taste but a very acceptable and wholesome acid to the stomach, an adjuvant in its important share in the act of digestion. Those afflicted with rheumatic pains have been benefited by its use. Its valuable properties as it is absorbed by the system are well known to chemists, recognized by the medical profession, and thoroughly established by years of practical experience. Governments appreciate its importance as an anti-scorbutic, and require it to be kept in ship stores. The London *Lancet*, in a strong article in favor of the use of lime fruit juice as a beverage, concludes as follows: "We counsel the public to drink their lime juice whenever and wherever they list. They may be assured that, as a rule, lime juice is, particularly during the summer, a far more wholesome drink than any form of alcohol and that, say an ounce or two of the pure juice in a tumbler of really cold water, sweetened to taste, is about the pleasantest beverage that can be taken when the thermometer is over 65° or 70° Fahrenheit. We commend this drink to the attention of the coffee tavern companies, but recommend them to procure the best West India lime juice, as more wholesome than any mixture containing other ingredients." It is used for the same purposes as lemon juice, and is coming more and more into favor every day, as being superior to it. It is done up for the trade in bottles, and makes a desirable article for all fancy grocers.

LIME WATER, when mixed with an equal quantity or excess of milk, is an excellent remedy for vomiting caused from irritability of the stomach. A piece of lime as large as a hen's egg, dissolved in a pint of water, makes the ordinary mixture.

LIMITATION, Statute of. On account of the frailty of human memory and the uncertainty of such claims, all countries have set a limit upon the time within which rights may be litigated, called the Statute of Limitations. The statute begins to run when the right is complete, *i. e.*, the money is due and payable subject to certain exceptions in favor of minors, persons beyond seas and *non compos mentis*, and after it begins to run is not estopped by anything except a payment on account, or an acknowledgment of the debt, accompanied by an express promise to pay it, which, in some States, must be in writing. In either event the debt is said to be revived and the statute begins to run over again from that date. The limitation being regulated by the Legislatures of the various States, differs greatly throughout the United States. New Mexico is the only State without such a statute. As it may be said generally, that claims founded upon instruments in writing, under seal, are not within the statute of any State. The period within which suits must be brought on contracts in writing, like bills and notes; contracts not in writing, like sales of goods evidenced by book accounts, is six years in Colorado, Dakota, Indiana, Maine, Massachusetts, Michigan, Minnesota, New Hampshire, New Jersey, New York, Ohio, Oregon, Pennsylvania, Rhode Island, South Carolina, Tennessee, Vermont, and Wisconsin. Five years in Montana and Nebraska. Three years in California, Delaware, Maryland, and North Carolina. Two years in Nevada. In the other States a difference is made between suits on contracts in writing and on contracts not in writing, as store accounts, in respect to the period of limitation. It is six years in the former case and four years in the latter in Georgia; six years in the former and three in the latter in Connecticut, District of Columbia, Mississippi, and Washington Territory; five years in the former and four in the latter in Wyoming Territory; five years in the former and three in the latter in Kansas, Louisiana, and West Virginia; five years in the former and two in the latter in Missouri and Virginia; four in the former and two in the latter in Idaho, Texas, and Utah.

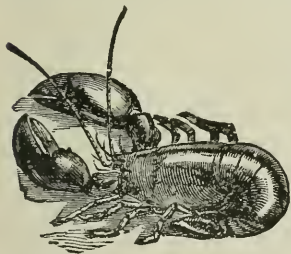
LING. A species of cod.

LINSEED OIL. Made from the seed of flax, is usually amber color, but when pure it is colorless. It has a peculiar and rather disagreeable odor and taste. Is produced by crushing the flaxseed and pressing it. It is sold mainly by weight, $7\frac{1}{2}$ lbs. being reckoned to a gallon. The cake from which the oil has been expressed is known as oil-cake, and is used to fatten cattle.

LIQUEURS A class of spirituous drinks sweetened and flavored with aromatic extracts from seed or fruits. They vary very much. *Ratafias* are simple, light liqueurs, containing small quantities alike of the sugar, spirits and flavorings. Such are anise-water, noyeau, apricot and cherry ratafias, etc. Oils or *fine* liqueurs are stronger, and among them we find Maraschino, Rosoglio, Dantzic water, etc. Various qualities and proportions of the ingredients are graded by French names, such as Eau-de-Noyeau, or Creme-de-Noyeau.

LIQUID MEASURE. A measure by which all liquids are sold (see tables).

LOBSTER. A fish of the crab species. It ranges in weight from one pound to about fourteen. Its best season is from October to May, and for the table it is very popular. The meat of the fish is put up in cans in immense quantities. One peculiarity in the lobster is that it grows only while its skin or shell is soft, or, in other words, while it is moulting or casting its shell, the rapidity of its growth at this time being wonderful. They are very voracious in their habits, and frequently have very animated combats among themselves, when one of the combatants is pretty sure to lose some part of a leg or claw; but another one grows in its place, which is always smaller than the one missing. The American lobster is distinguished from the rest of the family by the immense size of its claws.



LOZENGES. Flat, circular, or oval candies, composed of

farinaceous matter, sugar, gum, or isinglass, employed principally in medical practice, though there are kinds made that have become quite popular merely as candy.

LOVE APPLE (see *Tomato*). The tomato was introduced into France from this country and there given the name Love-apple; but it is now known only under the name *Tomato* (which see).

LUCCA OIL. A name for olive oil (which see).

LYE. See *Potash*.

MACARONI. This article of universal consumption in Europe is strictly an Italian invention (originally made of cheese and paste; for a very long period its manufacture was entirely confined to that country, the finest qualities even to-day being made there. Correctly speaking, the name macaroni applies only to wheaten paste manipulated in the form of pipes, while vermicelli and paste are the same article in other forms. The very hardest wheat is the only kind properly applicable to its manufacture, in consequence of its glutenous properties. For choice sorts, native manufacturers use the wheat of Odessa and Tagaroz. Briefly, the process of its manufacture is, the wheat is first ground into coarse meal, the bran being separated in the ordinary way; in this state it is termed *semola* (see *Semolina*); during the grinding it is absolutely necessary to apply heat and humidity to make *semola* of good quality. The *semola* is worked into dough with the addition of water; for macaroni and vermicelli the dough is then turned into a press supplied with a perforated bottom and cut in desired lengths as it passes out; a wire hangs in the centre of each hole in the press, to form the hollow in the centre, the paste being partially baked during this process to maintain its form. The whole of the manufacturing in Italy is executed in the most primeval manner.

The finest quality is that possessing the whitest appearance, and which, when boiling, does not split, but swells considerably and becomes quite soft, at the same time maintaining its form. If it fails to bear either of these tests, it has been made from inferior wheat.

The consumption of macaroni in this country constantly increases, and as it is a nutritious, cheap, and convenient article of food, it is becoming deservedly popular. Cooked with sharp cheese, boiled plainly and eaten as a vegetable with plenty of salt, in soups, and in many other ways, it makes a palatable and economical dish, suited to all classes. American manufacturers have, in some cases, produced an article fully equal to the imported, but in too many cases have injured the reputation of the domestic article.

We believe that no better and cheaper articles of food can be generally introduced to the American public than macaroni and vermicelli. The immense supplies of wheat in this country call for the use of every mode of preparing it for the table that can be developed. We cannot eat it as a vegetable with meats in any other form than this which the Italians have taught us, and except in bread there seems to be no usual way of eating it without sweetening. In cake, and in wheaten-grits porridge, our flour is generally surfeited with sugar to such an extent as to make it anything but a staple for diet. Healthy, cheap, and very nutritious, we cannot too strongly advocate the general adoption of macaroni upon our tables. The American manufacturers are steadily improving their product, and turning out an article which is firm and retains its shape even after continued boiling, and does not have a slimy, or pasty surface after being cooked. There is a flavor about the foreign article which is seldom reproduced in the domestic manufacture, and we must acknowledge that although some of our home brands are equal to any Italian goods in the market in sweetness of flavor, being made from better flour, but few of them are equally firm when cooked.

MACE is the inner covering which envelopes the nutmeg. It is carefully cut out, and resembles a lacerated membrane, being blood red and somewhat fleshy when fresh. It is then prepared for the market by being dried for several days in the sun and carefully flattened out. It becomes yellow in drying out. It has a peculiar, strong, yellow, volatile oil, which can be extracted by

the ordinary processes of distillation. It also contains a red, buttery fixed oil, which when mixed with other substances is known as Nutmeg Balsam. Mace has much the flavor of the nutmeg, but has a peculiarity which to most tastes is preferable. Care should be taken, in selecting, to choose that with a deep orange color, wax-like appearance, clear and transparent. Dull-looking parcels should be avoided, never being genuine mace, but what is usually termed "commerce mace." It comes chiefly from Penang and Singapore.

MACKEREL, considered by many the most beautiful of all fish which find their way to our markets, are usually seen here about the beginning of May. They are seldom brought in a live



state to our markets, being generally handled salted in barrels; but of late years appearing in tin cans. The fish are carefully selected and

placed in the barrels and numbered for the market 1, 2, 3, 4, according to the quality. It is necessary that No. 1 quality should not be under thirteen inches, free from taint, damage and rust, and fine, fat fish. No. 2 must be fat and free from rust, and not less than eleven inches. No. 3 is what are left in the selection of Nos. 1 and 2. No. 4 is what are left in the selection of all the other three brands, but must be free from damage or taint. Mackerel are packed into barrels or kits containing from fifteen to two hundred pounds; they are also extensively canned, and can even be opened and sold without any great risk on the part of the dealer. Mackerel taken in June are thought superior to the spring or fall catch.

The following, from the *Providence Journal*, is of interest:—
 "The packing and re-packing of mackerel is an extensive business, and the result of the latter, that is, repacking, is not always satisfactory to dealers or consumers. A barrel of mackerel weighs two hundred pounds. Two half barrels, then, should weigh one hundred pounds each, but it has happened too often that half barrels weighed fifteen or twenty pounds less than the hun-

dred. If a half barrel weighs eighty pounds, the re-packer from a whole barrel saved for his own profit forty pounds, or two kits of mackerel. This was a net gain to the packer and a dead loss to the buyer. This system of under-weights produced in re-packing has been carried to such an extent that there is an urgent demand for some law to regulate weights and measures, or some system of inspection to prevent the fraud and robbery now going on.

“Some of these, or perhaps the most short weights are made for the benefit of the country trade. The country dealer, supposing that his half barrel of mackerel contains one hundred pounds, bases his sale-price and profits on one hundred pounds, finding, when he reaches the bottom of the barrel, that he is short twenty pounds, and, of course, a good share, if not all, his profits on that half barrel. If he finds the weight to be short in the beginning, the loss of twenty pounds is made up by increase of price to consumer.

“The same system of packing is carried on with respect to kits, which ought to contain one-tenth of a barrel, or twenty pounds. They are often short three, four, or five pounds. The consumer may be offered a kit of mackerel at an under-price, and, buying, believes he is saving money, when he may be losing by the short weight of the kit. Some dealers who paid full prices for short-weight kits, demanded a rebate and got it. The remedy is easy; test the weight before buying. We would advise our readers to weigh their purchases of fish and learn if the weight paid for has been furnished. If not, the deficiency shows the amount of which they have been defrauded, and reclamations should be in every instance demanded, and the impositions exposed.”

In an address before the Massachusetts Fish and Game Association, Mr. Shebanah Rice says concerning the mackerel:—

“The historic mackerel made his best flip in America with his insatiate friend, the conservative codfish, to the great delight of the Pilgrims and Puritans, in their exceeding time of need, a kind service their sons and daughters are not soon inclined to forget.

Of all the finny tribes that roam or sport in the ocean, the mackerel is the most beautiful, eatable and valuable. While fresh it is found upon the table of the rich and poor many months in the year, affording always a healthy and desirable, sometimes a delicious, and often for months an exceedingly cheap kind of food. Fresh mackerel have been sold in London markets as high as seven shillings each, and as low as sixty for one shilling.

There have been inspected in Massachusetts alone, during the ten years preceding and including 1874, 2,316,083 barrels, an average of 231,000 barrels annually. At an average price of \$12.50 per barrel, which must be conceded a low estimate for these years, we have an annual product of about \$3,000,000 from the salt mackerel department of Massachusetts. In 1850 Professor Storer estimated that about 8,000 barrels of fresh mackerel were sold in the Boston market. Since 1850, owing to increased facilities for transportation, and the general use of ice, this branch has augmented in Boston at least tenfold. Immense quantities are carried direct to New York market during the spring and early summer, counting which, and other places, it would seem a safe calculation that at least half as many mackerel are now sold fresh as are salt packed. Estimating their values the same as the salted fish, and allowing only \$5,000,000 for all the mackerel caught in Maine and the other States, we have \$5,000,000 annual income to the industry of the State, on an outlay of \$13,000,000. This \$5,000,000 is purely productive; every dollar comes from the ocean. Not even farming is so pre-eminently and entirely a productive industry. The fisherman plows an untaxed furrow that needs no replenishing year by year.

It is almost incredible how fast mackerel may be caught by a trained crew. The mackerel sometimes go up so fast that the whole side of the vessel shines like silver. In July, 1842, a crew of eleven men and boys "struck a school" of biting mackerel on George's Bank. In twenty-five minutes they caught twenty-three strike-barrels (a barrel so full that the live mackerel jumped out). Ten hours such fishing would give 600 strike-barrels, which, at the present price of that quality, would stock \$7,000.

MAGGOTS. These destructive pests are the larvæ of the flesh and blow flies. They are found to be feeding upon meat, the carcasses of animals, and frequently upon sheep during the summer months. Care should be taken to watch meat during the hot weather for the first indication of their presence. Wash in strong salt water or vinegar. They usually locate in the moist parts. Their presence does not prove that the meat is bad, although, if not quickly removed, they will render it unfit for food.

MALAGA GRAPES is the name given to the large, white, imported grapes which come here packed in barrels and half-barrels, weighing about sixty and thirty pounds net. Though termed Malaga, it is erroneous to suppose that this is the place where they are grown; it is only the port of shipment. They arrive in the month of August, and continue until late in the year. It is always best to keep them in a cool, shaded, dry place, and when unpacked, care should be taken to brush them well with a soft brush, to remove the cork dust in which they are packed. The finest of them are of excellent flavor and among the best fruits in our markets.

MALT. Grain sweetened by beginning to sprout, and used in brewing. Wheat, rye, oats, or barley are steeped in water for twenty-four hours and then heaped up until the sprouts on the grain are one-eighth of an inch long. They are then spread out to dry, and afterwards kiln-dried, which arrests further germination and retains the sweetening or saccharine properties.

MALT EXTRACT. This strengthening article is growing in public favor. Many forms are offered, that of Tarrant & Co, New York, or the imported "Hoffs" sold by M. Eisner of Philadelphia, are very superior.

MALT VINEGAR. A strong vinegar in general use in Great Britain, and generally used in their picklings, gives a different flavor from American goods put up in cider vinegar, or the acid preparations prepared in the various ways described under Vinegar (which see).

MANDIOC, *Manioc*, or *Cassava*. A native of tropical America, where it is largely cultivated. It has recently been extensively cultivated in Africa. It is a half-bushy plant, growing from six to eight feet high. The root is large, turnip-like, sometimes weighing thirty pounds, from three to eight growing in a cluster, from which is made Brazilian arrow-root, etc., (See *Tapioca*).

MANGO. An East Indian fruit much valued by the natives, and made the basis of Chutney sauce. The unripe fruit is used to make tarts, and is preserved in various forms.

MANGEL WURZEL. See *Beet*.

MANILLA is the capital of the Philippine Islands, where hemp is extensively grown and exported through that port. This hemp, on account of its strength, is often used to make rope and paper which bears the name of this port. Large shipments of sugar are also made from Manilla, in bags, generally finding a market in Great Britain.

MANNA. A species of sugar which is extracted from the Manna Ash, a native of the mountainous parts of Southern Europe, by making small incisions in the stems. It is also extracted from various other trees and plants, from mushrooms, and even from the fronds of sea-weed.

This name has also been applied to certain patented foods of prepared wheat, etc.

MANUFACTURERS. Formerly the distinction between the jobber and the manufacturer was more plainly marked than at present, it being very usual now for wholesale grocers to put up goods under their own brands. This forces the manufacturer to seek the retail trade direct and makes many changes in the mode of doing business, which are well set forth in the following article, written by the late Major Price of New York, who founded the *American Grocer*, and subsequently *The Grocer* of that city:—

“A manufacturing jobber in groceries, as a rule, cannot sell goods bearing his own brand to other manufacturing jobbers who put up similar goods, nor to any extent to any other jobbers, ex-

cept at some distance from the point of manufacture. A natural consequence of this condition of things is that the large jobbing grocery houses which are manufacturing or having put under their own names almost every article in the trade, do not and cannot push the sale of goods regularly manufactured by the legitimate manufacturers, and this latter class is compelled to use extraordinary means to keep their goods in the lists of the other class. Moreover, the legitimate manufacturers are being compelled, by the facts here stated, to themselves seek the general jobbing and retail trade throughout the country in order to compete with the manufacturing jobbers. This state of affairs has been growing more and more serious and threatening to manufacturers for a series of years. We recall the time here in this city when the jobbers and manufacturers were two entirely distinct classes; when the former were content to sell the goods of the manufacturers; and when the idea of a jobbing house making or putting up its own soap and starch and baking powders and blue and cigars and canned goods and the thousand and one things usually sold to the trade had not entered the fertile brain of would-be monopolists in the grocery line. The right of the jobbing grocers to do as some of them are doing, is not the question, nor is the policy, perhaps, so far as they themselves are concerned; but the fact is of very serious moment to the legitimate manufacturers.

We appreciate the position of the manufacturers. They naturally wish all the trade they can get, and do not desire to offend any leading house. Hence they are put to a very great expense in complying with the requests of the jobbing manufacturers to help them push the sale of their goods by advertising them in house papers. We do not quarrel with them for this as long as they consider it to their interest to do so, but we wish to point out to them that there is a much better course to pursue, and that is to bring themselves into direct contact and competition with the very trade that the leading, jobbing, manufacturing grocery houses control and sell their goods to the general jobbing and best retail trade in the country.

The retail merchants of the country at large are deeply inter-

ested in this subject. Whether they are to be simply the agents, so to speak, of one house, selling all its goods under its name, and largely confined to what the house chooses to push on them, or whether they are to have the choice of all the best goods made in the country, are questions worthy of their consideration."

The policy of the *Philadelphia Grocer*, and all grocery journals honestly published in the interest of the retailer and not allied to a wholesale house, is to bring the manufacturer directly in contact with the retail dealer.

MANURES. A variety of mineral, as well as organic substances used to increase the production of plants. There are sulphates, phosphates, etc., but the best of all is the farm yard manure. The richer the food supplied to the cattle the better the manure produced. The commercial manures are guano, phosphates, ground bones, etc., which are kept in most country stores. Their value largely depends on the amount of soluble phosphate of lime which they contain. Being sold by importers and manufacturers to farmers on long time, it is necessary to have a wide margin, and the dealer who buys for cash should bring the price down materially before buying (see Guano).

MAPLE SUGAR is made from the sap of the sugar maple, a native of the United States and Canada. The sap is collected by boring the trees several feet above the ground to the depth of about half-an-inch with an auger. A spout or lip is then inserted in the holes, and pails catch the flowing sap. The trees are tapped in the early spring, just after the first thaws. A good tree will yield about six or seven pounds of sugar each season. The juice is boiled to a syrup, then strained and clarified and crystalized. It appears in our markets in cakes, and, as it commands a good price, is often adulterated with other sugars, and when sold as a syrup, in cans or bottles, is often nothing but ordinary syrup flavored to resemble maple sugar.

A writer in *Harper's*, comparing the old modes of sugar-making with those of to-day, says:—

"Sugar-making now and sugar-making as it was are very dif-

ferent things, and what it has gained in facility it has lost in picturesqueness. The old camp with its primitive appliances is no more; the "kettle" has been superseded by the "pan," and the trough has become a mass of crumbling decay. The women and children are kept at home, and no longer know the old-time delights of "sugaring off," though in the Arcadia of the past their services were not despised, and the whole household set up its abode in the woods.

The sap was collected then in troughs, each about three feet long, hollowed out of sections of poplars, and was conveyed to the kettles in barrels, from which it was transferred by scoops. There were five or more kettles, from ten to thirty gallons in capacity, and each was filled with sap, which was kept boiling, the larger kettles being filled from the smaller ones as evaporation reduced the quantity. When the contents were reduced to a desired consistency, the hot syrup was dipped out and passed through a flannel strainer into uncovered tubs, from which again it was poured into a large, thick-bottomed kettle for the process of "sugaring off," some milk and the whites of several eggs being added to it. Thus prepared, it was placed over a slow fire, and kept below the boiling-point until the sediment and all foreign matters in it floated to the top and were removed, when it became deliciously translucent. It was now exposed to a greater heat and gently boiled, the evaporation continuing, and bringing it nearer to the point of granulation. Now the sugar-maker was all watchfulness, and it fared ill with those who distracted him, for if the golden liquid seething in the kettle boiled the least bit too much, it would become dry in quality, while if it boiled too little, it would become "soggy." He tested it constantly, plucking threads of it from his stirring-stick, and trailing them round in cups of cold water. While the threads yielded waxy to the touch, the sugar was not yet done; but as soon as one broke crisp between his fingers, the moment had come to take the kettle off the fire. As the sugar began to cool, it crystalized round the sides, and gradually the whole mass, under a vigorous stirring, became granular.

In that way sugar was made years ago, and when the sap flowed profusely the operations were continued through the night and the fires cast strange shadows in the woods. But instead of a hut of logs a permanent sugar-house is now built, and furnished with many elaborate devices to prevent waste and deterioration. Formerly, when the maples were tapped with an auger, an "elder quill" was inserted in the incision to conduct the sap into the trough below; that is, a small piece of elder wood about three inches long, with the pith bored out of it, which formed a tube; but in most orchards to-day a galvanized iron spout is used, which has the advantage of not souring the sap nor choking many pores. Everything is "improved." The collections are made with the unvarying order of collections from letter-boxes, and if the grove is on a hill, and the sugar-house is in a hollow, the sap, as it is gathered, is emptied into a "flume," which quickly conducts it to a large reservoir within the building, wherein it is strained through cloth. A scoop or ladle is as anachronistic as a javelin. From the reservoir the sap is conducted, as required, through tin pipes, into a "heater," whence it passes through a series of iron tubes to be delivered, after straining, in a condition for "sugaring off."

Maple sugar as it reaches the market is of a clearer color for all these improvements; but there are some who actually say that the flavor has fallen off, and that the new patent evaporators are a snare. One change has certainly not been for the better, and that is the abandonment of the social life of the old camps which made sugar-time in the Green Mountains enduring memories with those who are now ebbing away."

MARJORAM (*Sweet*) is used for seasoning in cooking. An infusion of it is a stimulant, tonic, and remedy for nervousness. The oil is used for toothache and rheumatism. The sweet marjoram of our gardens is a native of Greece, and is used in the same way as the wild marjoram.

MARKET or *FAIR* was, and is now, in many places in Great Britain and this country a public gathering held at certain intervals, for disposing and buying of various products and manufac-

tures. The markets formerly in the city of Philadelphia were situated in Market Street, hence the name; but the progress of the city has been so rapid that the old markets have been pulled down, and the space occupied by them devoted to making it a fine and spacious thoroughfare. The modern exchange is simply a development of the old market or hiring fair of the past.

Among the many remaining old markets, perhaps the Cork butter market may be considered one of the best regulated of its kind, and is conducted on a principle well worthy of the highest commendation. A number of persons are appointed by the market committee, which is part of the common council, to test the quality of the butter exposed for sale. These inspectors do not know whose butter they are testing, and, after inspection, they brand it first, second, etc., according to quality. Traders residing in any part of Great Britain forward their orders for so many packages of certain qualities to brokers who go and buy on the market and charge the purchasers a commission of about fifty cents for every 112 pounds; this is also regulated by the same committee. On the following day the prices of all qualities are published in all the morning papers in Great Britain, so that the grocer knows both the exact price and the quality he buys.

MARMALADE is a semi-liquid preserve, made by boiling the pulp of thick rind fruits, such as oranges, pineapples, lemons, etc., with portions of their rinds. The most popular is that made from oranges. The mode of preparing it is as follows: The rind is boiled by itself first, then the white inside coating is removed. The rind is then cut up into small strips and boiled with the expressed juice of the pulp, and a quantity of sugar equal in weight to the other ingredients. After the mixture has attained its proper consistence, it is treated like other preserves. The Seville bitter oranges have, for a long time, been the favorite fruit used in its manufacture, but lately several houses in Florida have been making it extensively of native fruit. Sometimes a conserve is made from apricots, peaches, plums and pears, and improperly termed marmalade.

MARROWFAT. A variety of large peas which ripen quite late.

MATS, properly speaking, are textures formed of barks, rushes, or reeds. Coffee, figs, sugar, and various other articles are shipped from the Pacific ports in such bags, and are called mats of coffee, etc. Dates are similarly packed, but their coverings are called frails.

MATCHES. The progress from rubbing sticks together to produce fire up to the flint and steel and tinder which appeared to be always damp, on to the first match, which was merely tipped with sulphur and used in the tinder, thence to the "light-box," in which sulphuric acid served to ignite a prepared match, and thence past the first clumsy "lucifers," which were drawn through a piece of bent sandpaper, up to the modern or "Congreve" match, marks the progress of civilization and the growth of comfort and convenience with its development. The chemist Faraday introduced the first lucifer matches.

The wood used in making matches is the best, straight-grained, soft pine, which is cut into blocks and then shaved into strips by knives which act transversely. These strips are the length of two matches, and are passed through a hopper which drops them at regular intervals into a revolving tape or belt which binds them into a circular bundle like a double brush. This bundle is then flattened down with a heavy planer of the same size and put in a kiln to dry. One end is then dipped into melted sulphur or paraffine wax, and when it is dry, the other end is dipped also. Then follows the dipping into the phosphorus preparation, after which the belt is unrolled and the matches are made, except that they are of double length and tipped at both ends. They are then cut in two by machinery and packed in boxes.

Safety matches are those which will not ignite unless they are rubbed on a specially prepared surface; but being found inconvenient, they are not generally used.

Parlor matches are generally perfumed and are dipped in paraffine instead of sulphur. Card matches are made in the form of

a comb, and are generally used in New England. As they are very convenient for the pocket, and are not as liable to be dropped, they are well suited to the use of railway and warehousemen and farmers.

Matches are a most troublesome article in stock. Dangerous at all times, difficult to ship with other goods, and refused by most railroads except on special days and under strict terms, they are a necessary evil and should be made to pay a good profit.

The manufacture of matches in the United States has been reduced to one giant stock company, known as the United States Match Association, into which all the factories are merged. The existing tax is a virtual protection to this company, as small makers could not compete under the present provisions of the law which provides for a large discount on sales of revenue stamps in quantities over \$5,000, etc., and although the public and the grocer alike are ardently desirous that the tax shall be abolished, the match company urges its continuance. To maintain this monopoly the country pays a stamp tax of \$3,000,000 per year. Its repeal, through opening the manufacture of matches to competition, would reduce their cost to the consumer more than one-half.

This is the only country in which matches are taxed for internal revenue purposes. The percentage of tax is greater than that on any other article. If this tax was abolished dealers could buy a case of matches for \$1.35 instead of \$4.20, the present price, the tax being \$2.88.

The retention of the present match-box laws virtually lends government aid to the United States Match Association to enforce its monopoly of the match business by barring the small beginner, thereby closing competition. The repeal of the match tax cannot injure the legitimate profits of the match industry, nor will it seriously affect the revenue of the government, but it will benefit the entire population.

MEAD. A fermented liquor made from honey. The honey is mixed with water and fermentation is produced by the use of soda or yeast. It was at one time a fashionable drink.

MEAL is any kind of grain coarsely ground, such as oat meal, corn meal, etc. It is used in various forms as an article of food.

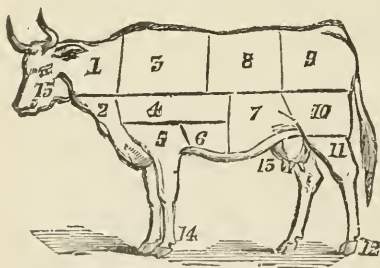
MEAL-WORM. A most destructive winged insect abounding in granaries, mills and stores, where large quantities of meal and flour are stored. The larvæ are shiny and of pale brown color. Cleanliness and care are the only preventatives against these pests. Meal-worms are a favorite food for caged sing-

ing birds.

MEASURES. See *Weights and Measures and Sealer of Weights and Measures.*

MEAT. It is both dangerous and unprofitable for a grocer to sell meats, unless he has his store well fitted, so that he can handle them with a certain degree of safety (see *Store Fittings*). With the grocer the great enemy in hot weather is the fly, which leaves its eggs in some moist crevice of the meat. It is surprising with what rapidity the eggs hatch or become live maggots; consequently it is very needful that a keen watch should be kept, in order to arrest their development; when discovered, apply salt water or vinegar, which will, as a rule, remove all traces. Meat kept on ice loses its flavor and does not grow tender, as is the rule, with age. But when put on ice it is advisable not to thaw it until

ready to cook, as it soon becomes spoiled. *Beef* is the most important of meats, and it is curious that in different parts of the country there are many varieties of names for the same cut; for instance, the hip sirloin of New York is the hook-bone in Boston, and the shin-bone in Philadelphia; therefore, we have carefully arranged under the opposite engraving the names which



1. Neck. 2. Shoulder-piece. 3. Chine.
4. Ribs. 5. Clod. 6. Brisket. 7. Flank.
8. Loin, sirloin. 9. Rump. 10. Round.
11. Leg. 12. Foot. 13. Udder. 14. Shin.
15. Cheek.

appear to us as the most general and desirable. The accompanying cut is the representation of a beef.

Beef is the best flesh-former of our foods, and withal is very digestible, taking but three hours to complete that process.

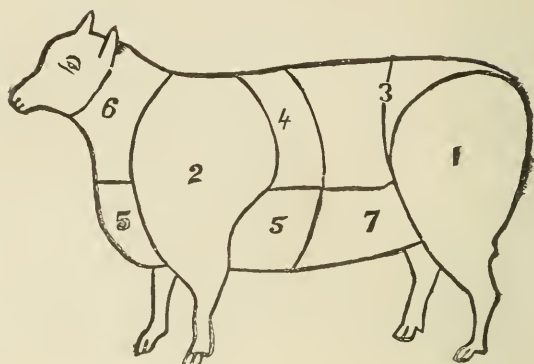
When heads of families, says the *Evening Star*, learn to know that there are parts of the beef equally as nutritious as the sirloin or rump steak and standing rib roast, and that with no greater amount of cost and trouble they can be served at the table in a form as palatable and inviting as the better cuts, and having learned this, will strive to acquire the culinary skill needed to thus prepare them, they will speedily compel a reduction in the price of this staple article. But as long as the caterers for families cling to the idea that there are only three or four pieces in the beef that are fit for the table, and will persist in having those, they must make up their minds to the fact that good round prices will rule.

Mutton is the dressed flesh of the sheep. The best age at which to kill sheep seems to be from the third to the fifth year. Mutton that is too young lacks flavor; if too old, it is tough. In the fall of the year it is dryer and more strongly marked by that flavor termed "woolly" or "sheepy," because the taste resembles the smell of the live animal. All mutton, to avoid this flavor, should be hung up for two days where it will be cool enough and not too dry. The quality of the mutton depends on the breed and the feeding of the sheep. In England these two points have received more attention than in the United States, but the quality of our domestic mutton is steadily improving and our cooks are learning to prepare it for the table more skillfully, and its consumption is rapidly increasing, especially in our large cities.

In purchasing carcasses of mutton the grocer must take into account the loss of weight which will ensue from drying out while it hangs in his store. A carcass of mutton will lose from eight to ten pounds in a week when hung up. In selecting it he should see that the meat is fine grained, firm, and bright red in color. If the flesh is flabby, or the kidney fat small, it should be avoided.

When a grocer handles meats they should be of the best quality.
The sheep is cut up as the following diagram shows :

1. Leg.
2. Shoulder.
3. Loin.
4. Neck.
5. Breast.
6. Scrag (end of the neck).
7. Flank.



Lamb is generally understood to be under twelve months old. Spring lamb comes in season as early as March, and is best from June to August. This young meat is much harder to keep than mutton. As lambs are very tender animals their flesh is easily injured by rough treatment, by storms, or poor food. The color and quality of the fat on the back and around the kidneys affords the best test of the quality. It should be white, even-colored and hard. Its parts, when cut up, are termed the same as mutton cuts.

Veal. The dressed carcass of a calf constitutes veal. It is much more difficult to keep than beef and requires great care. When left in its hide after being trimmed and cleaned, it is said to be "hog-dressed." In this way it best retains its moisture and flavor. The best veal is that of a six-weeks-old calf. No veal under four weeks old should be eaten, as it is not fit for food and stringent laws have been passed forbidding its sale. Up to the sixth week it is known as milk-veal; after this time the calf is fed on other foods and its flesh grows darker and less juicy. "Bob-



[Hind] Quarter.



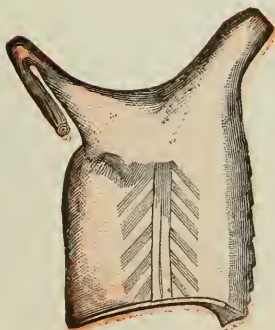
Chops.



Shoulder.



Leg.

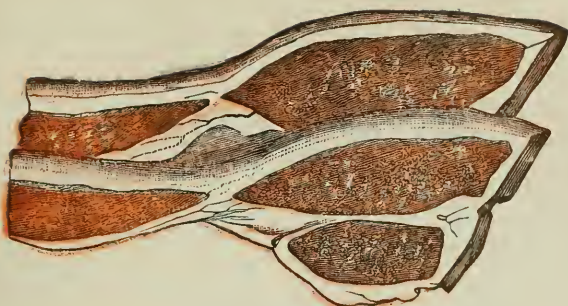


Fore Quarter.

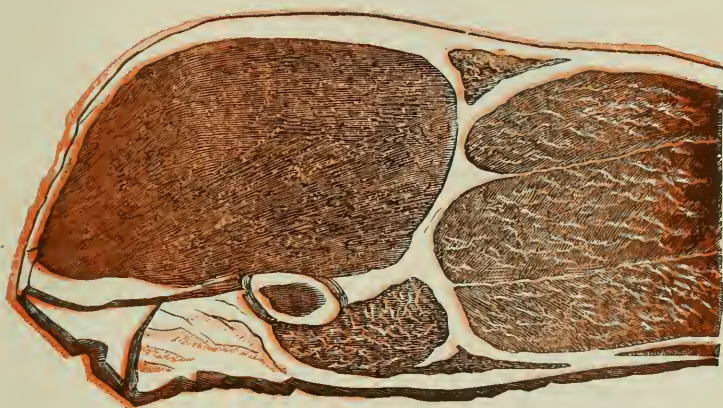


Saddle.

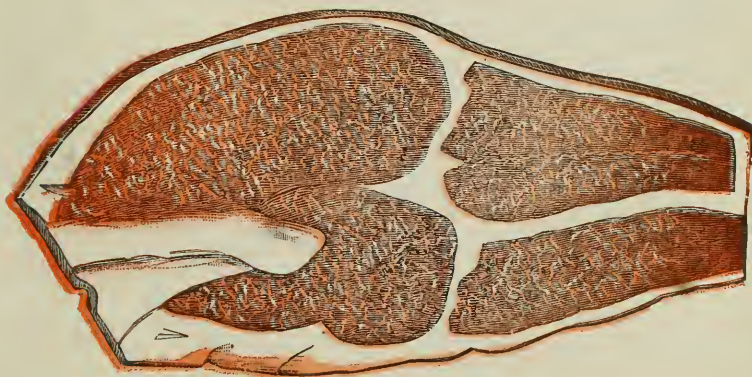
MUTTON.



Small Loin or Porter House.



Round Bone Sirloin.



Flat Bone Sirloin.



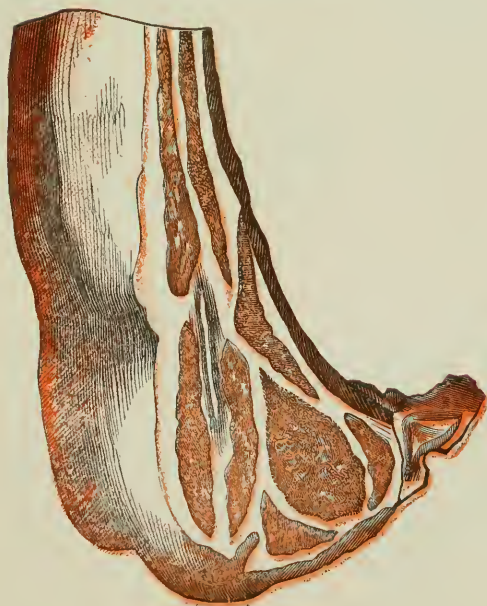
First Cut Ribs.



Middle Ribs.



Fifth and Sixth Cut Ribs.

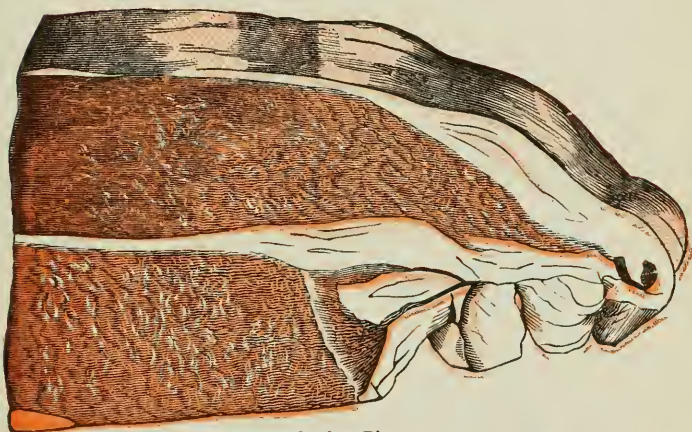


Third Cut Ribs.

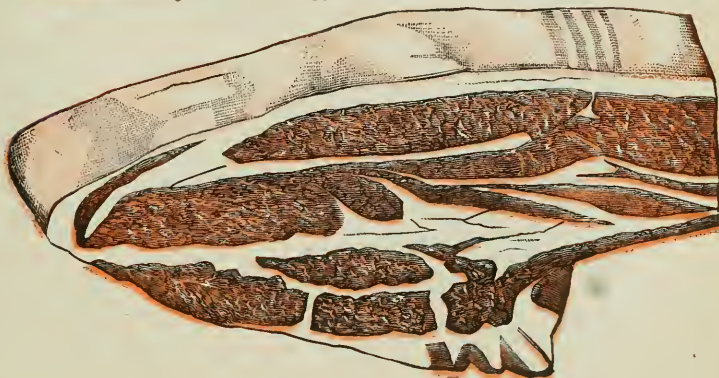




First Cut Chuck.

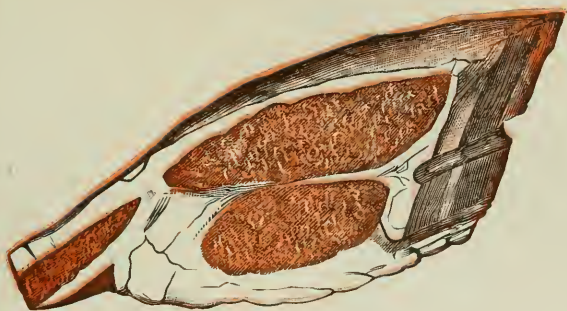


Socket Piece.

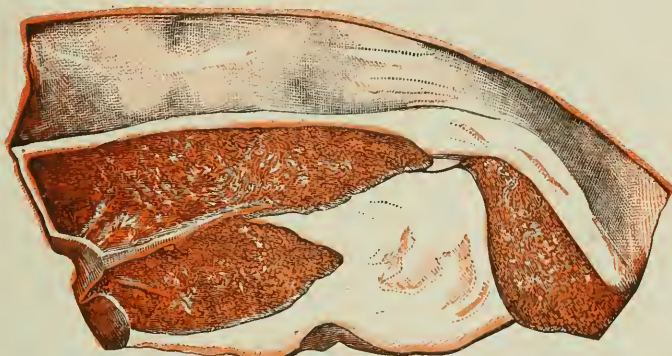


Second Cut, or Chuck Rib.

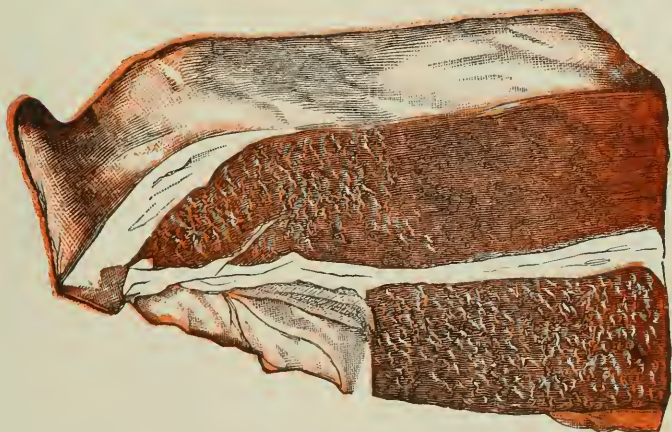




Middle Cut Sirloin.



Hip Sirloin.

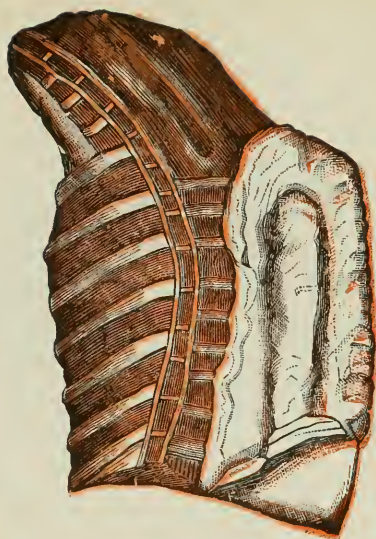


Rump of Beef.





Leg.



Breast.



Loin.

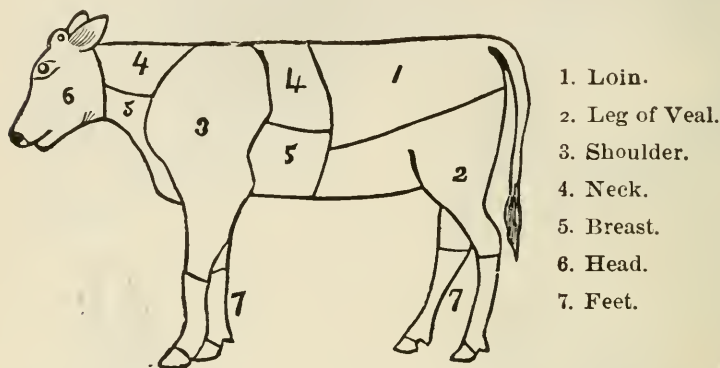


Shoulder.

VEAL.

veal" is that which is unfit for food, because too young. It often appears in the markets when not a week old, and when pork fat must be put around the kidneys (called "plating" by butchers) in order to induce a sale.

The calf is dressed and cut into the parts shown in the following engraving:



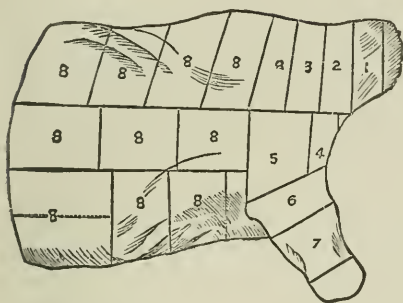
1. Loin.
2. Leg of Veal.
3. Shoulder.
4. Neck.
5. Breast.
6. Head.
7. Feet.

MEATS (*Barreled—See also Pork*). Beef, when packed in salt, is generally subject to the following rules:

Mess Beef should be packed from well fattened cattle, weighing 450 pounds and upwards net, and cut as near ten-pound pieces as practicable, and excluding the legs and ends of the hind quarter, shin and shoulder clod and eight pounds of neck from the fore quarter, and should be packed in regular provision packages, with at least twenty pounds of good domestic or foreign salt and at least four ounces of saltpetre and pickle as strong as salt will make it.

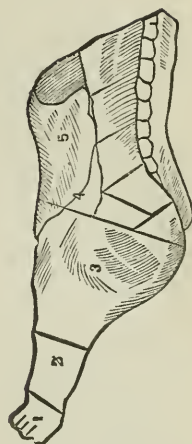
Extra Mess Beef. From well-fatted cattle, weighing not less than 500 pounds, cut and packed the same as mess beef. The date of packing to be branded on the head of the package.

The following cuts represent the mode and name given to the joints cut for salting :



No. 1.

No. 1.—1. Neck. 2. Leather-shoulder. 3. Chuck. 4. End of sticking-piece. 5. Shoulder. 6. Shoulder-clod. 7. Shin. 8. Mess-piece.



No. 2.

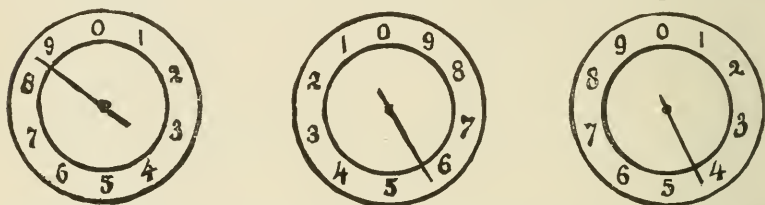
No. 2.—1. Leg. 2. Leg Round. 3. Round. 4. Thick Flank. 5. Shin Flank.

MEDICINES (*Patent*). This term covers all proprietary medicines, and, of course, includes more that are worthless than valuable; but it is useless to decry the entire class because the majority are worse than valueless. Many simple forms of medicine for external application or relieving colds, etc., are of great value, because they can be conveniently and reasonably procured. They pay the dealer a good profit, and the trade is very wisely giving more attention to them every year. We give, for convenience of the reader, the most noted proprietary medicines in the country: Jayne's Expectorant, Radway's Ready Relief, and St. Jacob's Oil, Brown's Bronchial Troches, Tarrant's Seltzer Aperient, Hoff's Malt Extract, Brown's Jamaica Ginger, Wishart's Pine Tree Tar Cordial, Tobias' Venetian Liniment, Ayer's Sarsaparilla and Cherry Pectoral, Dr. Bull's Cough Syrup.

MELON. This class includes a great variety, from the cantaloupe to the watermelon. The most popular is the watermelon,

which is supposed to be a native of Africa, though seldom found wild. It is very extensively cultivated in all warm climates and flourishes best on the warm soils of New Jersey and the Southern States. The Mountain Sprout or Carolina is, perhaps, the first to make its appearance in the northern markets. There are also the Black Spanish, a good variety, almost round, medium size, sweet and delicious. The White Japan, Skillman's Netted, Persian Ispahan, and Christiana follow. The citron melon is small, nearly round, with variegated shell and seedy flesh. It is used for making preserves. (See Musk Melon.)

METER (Gas). Each division on the right hand circle denotes 100 feet, on the centre dial 1,000 feet, and on the left-hand dial 10,000 feet. To take a statement from the meter, begin at the



left hand and set down the *lowest* figures next to the hands on each circle, which in the diagram are 8, 5, and 4, showing the statement to be 85,400. From this amount must be deducted the amount which the meter registered at the last bill, and the result will be the number of feet consumed since that time. If the water in the meter is too high it counts against the consumer, and if too low it counts against the company.

METRICAL SYSTEM. The French system of measures, which was adopted and received the sanction of the French Government November 2d, 1801, after a most elaborate investigation by the greatest scientists of France, is based on the decimal calculation and is intended to be the standard of all the world. *Bradstreet's*, in a late issue, says: "It has been made the only legal system of France, Germany, Spain, Italy, Portugal, Holland, Belgium, Brazil, Turkey, Roumania, Moldavia, Wallachia, the French, Dutch, and Spanish colonies. It has also been adopted

by the majority of the South American States ; in part by Switzerland, Greece and Denmark ; legalized by Great Britain, and made obligatory in British India. Russia has also taken the initiatory steps towards its adoption. In 1866 it was legalized in the United States. It thus appears that the system has received the approbation of the majority of civilized nations.

Some of its advantages are as follows : Its base, the metre, is unalterable, being practically the length of a certain platinum bar constructed to be equal to one ten-millionth part of the earth's quadrant, passing through Paris. As thousands of copies of the original bar have been made, and are almost everywhere in use, we have for the unit of length a standard as unalterable as the meridian itself. On the other hand, the barleycorn, foot, grain, pennyweight, and such like, were taken from common things as standards, which once may have been real equivalents, but with entire lack of correspondence now ; and so it comes to pass that more than one hundred foot-measures of different lengths have been in use one time or another in Europe, and more than five thousand different units of weights and measures are said to have existed in the world. Its simplicity : the system being composed of twelve words, each in itself expressive of value, as against about fifty in our present system. Its uniformity : rendering mutually intelligible our own and foreign books that contain statements of weights and measures, facilitating commerce and trade by avoiding delays and difficulties in reducing values from one system to another. The bulk of our imports and exports is with nations using in whole or part the metric. Another very great advantage is, that the relation existing between the measures of length, volume, weight and capacity, is such that, given the weight of a body, its volume can be easily determined, and, reciprocally, a relation not existing in our present system.

MILDEW. A certain diseased state of plants, caused by the growths of small fungi. Many of the most destructive mildews are of a red and brown color, as the mildew of the pear. (See Awnings).

MILK is an opaque, white fluid, secreted by the mammary glands of the female class *Mammalia*. Among the many instruments which are used for the detection of adulterations, are the galactometer and the hydrometer. The first is a simple and most reliable method; it consists of a glass tube—a perfectly straight bottle will answer the purpose—which is marked off into one hundred parts and filled with milk, which is allowed to stand until the cream has completely separated, when the quality of the milk is shown by the number of parts of cream in the hundred. The hydrometer was invented by Döeffel, and is preferred by chemists; it simply detects the presence of water, and in the hands of unskilled persons is of little use, as the addition of extra sugar or starch increases the density of the milk and renders the instrument useless. Investigation finds very few cases of adulteration of milk (except with water). The presence of starch may be tested by dropping a little iodine into it; if a violet blue color forms, starch is present. Chalk settles, and if these settleings are dissolved in vinegar they will foam up.

MILK (Condensed). The following article is selected as a description of the process of making condensed milk, which, for use on shipboard, in mining camps, and for pleasure parties, is almost a perfect substitute for the fresh article, and its preparation is due to the wants of people who cannot obtain a supply of fresh milk. In connection with sugar and carbonate of soda, it is under certain conditions, evaporated till it appears in the form of mealy powder; it is then pressed into brick-shaped cakes. These must be triturated with warm water when it is to be used. Milk may be dessicated by evaporating to the consistence of dough and then thoroughly drying, after which it is crushed and bottled. Various processes are in use for preserving milk, but the most common is that of condensing. The process of condensing milk is as follows: When the milk is received at the factory, it is passed through the strainer into the receiving-can, from which it is conducted through another strainer into cans holding about twenty gallons each, and in these the milk is heated. This is done by

setting them in hot water, and the milk is held there till it reaches a temperature of 150° to 175° Fahr. The milk next passes through another strainer into a large vat containing at the bottom a coil of copper pipe, through which steam is passed, and here the milk is heated up to the boiling point. Granulated sugar of the best quality is then added in the proportion of one and a quarter pounds to a gallon of milk. From the steam vat it is conducted to the vacuum-pan, which has a capacity for condensing 3,000 quarts or more at a time. It is now subjected to the heat for about three hours, during which time it will lose 75 per cent. of its bulk, which represents the amount of water evaporated. At this stage it is drawn off into cans holding about forty quarts each, which are set in cold water until the temperature is reduced to about 70° Fahr. It is then poured into large drawing cans furnished with faucets. From here it is drawn into small cans holding about a pound each. These cans are then immediately soldered up. Milk preserved in this way can be kept an indefinite length of time, and is used for any purpose to which fresh milk is adapted. It is generally of excellent quality, for if the milk was tainted or impure the product would not keep. Preserved milk thus made contains about one third of its weight in sugar. A number of factories in this country and Europe are engaged in the industry, which has become of considerable importance.

MILLET. A grain, of which there are many kinds, some furnishing the best of fodder, others used for feeding caged birds, while that grown in Peru is made into a white flour which is extensively used in that country as an article of food.

MINCE MEAT. The season for mince meat opens about October 1st and continues as long as the cold weather. It is important to have a supply on hand before the actual demand sets in, rather than after it. In common with all mixed articles, mince meat can be prepared in many ways, and much that is offered is trash, so much so that many families prefer to prepare their own supplies. But such leading manufacturers as Atmore & Son of Philadelphia put up goods which cannot be excelled. Their fruit

is cleaned and handled by machinery and the experience and reputation of many years guarantee their product.

MINERAL WATERS. Bottled mineral waters are termed soft goods by saloon-keepers, and are profitable stock to retail grocers both in the margin they leave and because they draw good trade from the more extravagant classes. The higher grades, such as genuine Apollinaris water, or Hawthorn Spring water, are easy to handle if kept in a cool place and laid on their sides.

MINT. There are various species of this plant, all of which are more or less medicinal, containing an essential oil. The peppermint, the strongest of its kind, is used for making oil of peppermint, which is extensively used for flavoring candy.

MOLASSES is the syrup, or, as it is termed in the immediate districts where it is manufactured, the mother-water, that is separated from the crystals or grains of raw sugar in the process of manufacture; when the sugar is becoming dry or crystalized the syrup drops from the grains as honey does from the comb. The name molasses, in this country, is erroneously given to sugar-house syrup, known as black strap, which in England is called treacle (see Sugar-house Syrup), made from the last boilings of common sugar. In France and the rest of Europe, treacle and molasses bear the name of molasses indiscriminately, with the exception of Germany, where they are both designated as syrup.

The quality of molasses depends entirely on the color, strength and most of all the treatment of the raw sugar from which it is obtained; consequently it is impossible to get fine, bright, clear, good flavored molasses, except from sugar of excellent quality, both in color and flavor. A strong, but in other respects undesirable quality of molasses is obtained from clayed sugar, but it has a tendency to become acid, which, even in the best quality, can easily be detected by its tainted flavor. By strong molasses we mean that most capable of producing a large percentage of granulated sugar. The heaviest molasses, although containing much less water, and, therefore, a greater quantity of saccharine or sweetening matter, is not, as a rule, the strongest, its thickness

very often being the surest sign of the presence of grape sugar and many other impurities detrimental to obtaining good granulated sugar. The best molasses is that obtained from the first crops collected previous to the copious periodical rains which occur where the cane is cultivated.

Molasses generally is of a dark-brown color, but the best grades are those produced at St. Croix, Barbadoes, and Porto Rico, being of that bright amber color and clear sweet flavor so much esteemed by lovers of this cheap and appetizing adjunct to our table. It is a strange feature with molasses that its consumption is almost entirely confined to the English-speaking peoples.

The more improvements that arise in the manufacture of sugar from cane, the less molasses we shall have, because it is not nearly as profitable as to crystalize the sugar. Molasses is handled in barrels, tierces, puncheons and hogsheads which contain approximately 45, 80, 120, and 150 gallons. New Orleans molasses is always shipped in cypress barrels, and the new crop arrives in market about November 1st. Do not buy molasses that has had the original gauge of the hogshead changed. Only the outs are liable to change. Every grocer should have an out or ullage stick, U. S. standard, which can be procured for about one dollar, of the hardware dealers.

MOLD. (See *Mildew*).

MUSH, or cornmeal porridge, is now prepared and supplied to the trade in tin pans, holding about five pounds each. Families buy it for frying. It does away with the risks of lumpiness, burning, etc., against which some housekeepers fail to provide, and is quite saleable

MUSHROOMS are eaten as a fruit with salt, or as a dressing with meats. In France they are extensively cultivated in vaults and catacombs. They are much valued by epicures, and are sold in cans by the trade. They are gathered in considerable quantities in the pasture fields around the larger cities. The gathering of these fungi is said to be a profitable employment. The mushroom springs up in the night and withers as soon as the sun comes

up, consequently the gatherers have to begin their search before the break of day. An active man or boy can secure, when they are any way at all plentiful, from one to ten quarts in a morning, and they are disposed of readily at from 25 to 50 cents per quart. It requires a quick and experienced eye to tell the difference between the edible mushroom and the poisonous toadstool, and gatherers who are not well known have some difficulty in disposing of their wares. The hotels and wealthy people take pretty much all the mushrooms that are gathered. *Progress* says concerning these dainties: "Why is it nobody cultivates mushrooms in America? If anybody is in the business it must be on a very small scale. Even the wild mushrooms are seldom gathered, yet when they are brought to market they are rapidly sold at good prices. Forty cents a quart is not a small sum to ask for what can be picked up in five minutes. The mushroom is a delicacy liked by everybody, and to raise it is an easy matter. As it is, by far the greater part of our mushrooms come in cans from France, and are not to be compared to the fresh article."

MUSK MELON. Many varieties appear in our markets, among which the nutmeg, cantaloupe, and citron are the most noted. They arrive about August 1st. Those of the nutmeg variety are large and well flavored. The cantaloupe is the earliest and is a favorite.

MUSTARD. There are two kinds of mustard seed, black and white. When the condiment now known in the grocery stores as mustard was first manufactured in England it was simply nothing more than the crushed seed. The manipulation gradually developed as it became necessary for the manufacturers to cater to the public taste, and the result is that each manufacturer now has his own receipt for making this condiment. Genuine mustard is easily obtainable, but it is found that it does not answer the purposes and supply the wants of the public as well as the preparations made by eminent manufacturers. The duty on ground mustard imported into this country is fourteen cents per pound, and as the whole mustard seed comes in free of duty it is unques-

tionably to the interest of the trade and the public to handle good domestic brands, among which Colburn's Philadelphia Mustard is well known.

According to the *Grocers' Journal*, mustard was little known at English tables before the year 1729. About that time an old woman of the name of Clements, residing in Durham, began to grind the seed in a mill and to pass the flour through the several processes necessary to free it from the husks. She kept her secret to herself for many years, during which she sold large quantities of mustard throughout the country, but especially in London. Here it was introduced to the royal table where it received the approval of George I. From the circumstance of Mrs. Clements being a resident of Durham, it obtained the name of Durham mustard. The manufacture of mustard consisted in simply grinding the seed into a very fine flour, a bushel of seed weighing sixty pounds yielding twenty-eight to thirty pounds of flour of mustard. A false taste, however, arose for having an improved color, and the flour of mustard was introduced from which the oil had been abstracted. Hence, other materials, such as capsicum powder, turmeric, terra alba, wheaten flour, etc., are added to bring up the flavor and to increase the bulk.

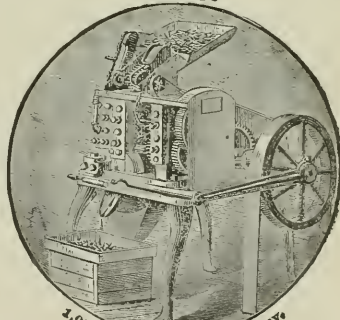
NAILS. Nail-making by machinery was originated in Massa-

1776.



6 lbs. of finished Nails per day.

1876.



1,000 lbs. Finished Nails per day.

chusetts in 1810, and has reached great perfection. Our illustrations are taken from the circular of the Globe Nail Company of

Boston. Many persons are puzzled to understand what the terms "four-penny," "six penny," "ten-penny," mean, as applied to nails. "Four penny" means four pounds to the thousand nails, and "six-penny" means six pounds to the thousand, and so on. It is an English term, and meant at first "ten-pound" nails (the thousand being understood), but the English clipped to "ten-pun," and from that it degenerated until "penny" was substituted for "pounds." When a thousand nails weigh less than a pound they are called tacks, brads, etc., and reckoned by the ounce.

The following complete and accurate Nail Card, showing the length, weight, and price over the rate of every size of nail in ordinary use, may be relied upon as correct, as pains have been taken to actually test all the figures herein given :

Size.	Length inch	No. to the lb	Price over 10d	Size.	Length inch	No. to the lb	Price over 10d	Size.	Length inch	No. to the lb	Price over 10d
2d Com.	1	800	\$2 75	Barrel	3 1/8	80	\$4 00	2d Fine Blued	1	1000	\$3 75
3d "	1 1/4	464	1 51	"	3 1/8	500	3 00	"	1 1/4	809	3 00
4d "	1 1/2	296	75	2d "	1	376	2 50	"	1 1/2	368	1 75
5d "	1 3/4	224	75	"	1 1/8	293	1 75	6d Clinch	2	95	1 75
6d "	2	168	50	3d "	1 1/4	224	1 50	7d "	2 1/4	74	1 75
7d "	2 1/4	120	50	"	1 3/8	180	1 00	"	2 1/2	62	1 75
8d "	2 1/2	88	25	4d "	1 1/2	180	75	9d "	2 3/4	53	1 75
9d "	2 3/4	70	25	2d finish'g	1	1100	5 60	10d "	3	46	1 15
10d "	3	60	Rate.	3d "	1 1/4	720	4 00	12d "	3 1/4	42	1 75
12d "	3 1/4	48	"	"	1 3/8	523	2 25	16d "	3 1/2	38	1 75
16d "	3 1/2	36	"	4d "	1 1/2	410	2 00	20d "	4	33	1 75
2 d "	4	24	"	5d "	1 3/4	268	2 00	2d Slating	1	.....	3 00
30d "	4 1/2	17	"	6d "	2	146	1 75	3d "	1 1/4	300	1 75
40d "	5	13	"	8d "	2 1/2	102	1 50	4d "	1 1/2	200	1 00
50d "	5 1/2	9 1/2	"	10d "	3	.....	1 25	5d "	1 3/4	150	1 00
60d "	6	8	"	3d castings	1 1/4	.....	2 50	5d Tobacco	1 3/4	130	1 25
6d Fence	2	84	50	4d "	1 1/2	398	1 50	6d "	2	96	1 00
8d "	2 1/2	48	25	6d "	2	224	1 25	7d "	2 1/4	82	1 09
10d "	3	30	Rate.	8d "	2 1/2	128	1 00	8d "	2 1/2	68	75
12d "	3 1/4	24	"	1d "	3	91	75	10d "	3	.....	50
16d "	3 1/2	20	"	12d "	3 1/4	71	75	20d Cut Spikes	4	11 1/2	25
6d Brads	2	126	50	16d "	3 1/2	51	75	30d "	4 1/2	12 1/2	25
7d "	2 1/4	98	50	20d "	4	40	75	40d "	5	9 1/2	25
8d "	2 1/2	75	25	30d "	4 1/2	33	75	50d "	5 1/2	8	25
9d "	2 3/4	65	25	.....	.....	.....	60d	6	6	25	
10d "	3	55	Rate.	.....	.....	.....	.....	.....	.....	.....	.....

NASTURTIIUM, or Indian cress, used as a salad. Its young buds and seed pods are pickled and used as capers. They are gathered in August.

NATRONA is a term used to designate carbonate of soda, which always contains chloride of sodium.





NUTMEG.

NECTARINE. (See *Peach*.)

NOIX DE COCOA. (See *Cocoanut*.)

NOYEAU. See *Liqueurs*.

NUTS. The nuts which may be considered of most commercial value are the hazel nut, black Spanish, the Barcelona, the Smyrna, the Jerusalem filbert and the common filbert, the peanut, walnut, chestnut, hickory and soura, the cocoa, and the Brazil or Para nut. The more important are treated separately elsewhere.

NUTMEGS. This popular and well-known spice is the kernel of a fruit termed myristica. There are in all nearly forty species, all tropical trees. It is a native of South America, Asia, and Madagascar, but it is from the *M. Fatua* we procure the nutmegs of commerce. Penang nutmegs are, as a rule, the finest we get, but many desirable parcels come from the West Indies, Jamaica and Trinidad. In purchasing, those are the best quality which are of an oily appearance and heavy; light, dried, dull kinds should always be avoided.

A writer on this subject says: "Nutmegs grow on little trees which look like little pear trees, and are not generally over twenty feet high. The flowers are very much like the lily of the valley. They are pale and very fragrant. The nutmeg is the seed of the fruit, and mace is the thin covering over the seed. The fruit is about as large as a peach. When ripe, it breaks open and shows a little nut inside. The trees grow on the islands of Asia and tropical America. They bear fruit for seventy or eighty years, having ripe fruit upon them all the seasons. A fine tree in Jamaica has over four thousand nutmegs on it every year. The Dutch used to have all this nutmeg trade, as they owned the Banda Islands and conquered all the other traders and destroyed the trees. To keep the price up they once burned three piles of nutmegs, each of which was as big as a church. Nature did not, however, sympathize with such meanness. The nutmeg pigeon, found in all the Indian Islands, did for the world what the Dutch had determined should not be done—carried the nuts, which are their food, into all the surrounding countries, and trees grew again and the world had the benefit.

OATMEAL is generally denominated by the cut, as pinhead rough cut, medium and fine cut, though these terms have different meanings in different districts. After the grinding the meal is passed through sieves and the siftings graded according to size. It would be well for grocers to remember that oatmeal is a somewhat perishable article. By exposure to the air for a few weeks it becomes old meal and has acquired a bitter taste, which is quite disagreeable. In the oatmeal mills a sort of funnel, air-tight, extends from top to bottom of the mill, in which the oatmeal is packed. In keeping oatmeal in stores it must be kept from the air; packing in air-tight boxes or paper bags will preserve it. The *American Cultivator* says: The use of oatmeal is largely on the increase in our large cities and towns, yet it is not so extensively consumed in this country as in many of the European countries. The grain is very rich in gluten and fat, and contains a good quantity of starch and sugar, being everywhere recognized as a valuable food. It cannot be leavened into bread, but it makes good cakes. In Scotland the finer variety of oatmeal is baked thin, but the coarser kind is made into thick cakes, called bannocks. In Norway the common food of the peasantry is a thin cake, called fiad brod, which is made of ground oats, husk and all, mixed with potatoes, and baked on a griddle or frying-pan. A palatable dish is made in parts of Scotland by toasting oatmeal before a bright fire, then mixing it with a little beef or mutton fat, and, after seasoning it with pepper, salt, and onions chopped small, again toasting it. The common method of cooking it, however, in Scotland, is by stirring it with boiling water until it has the consistence of hasty pudding, and in this manner Scotch brose is made; but if more diluted and boiled for a longer time, it makes porridge. In Ireland it is mixed with Indian meal, and then stirred into boiling water, thus making the mixture called stir-about. Whey and milk are often used instead of water, and the mixture should be well boiled, otherwise it is apt to produce flatulence. The decorticated grain constitutes grits or groats, commonly used in the form of gruel.

OKRA. See *Gumbo*.

OIL (for illuminating see Kerosene). The liquid vegetable oils are very numerous; first in rank, from a commercial point, is olive oil, made from the ripe fruit of the common olive; when good and fresh, it is of a pale, greenish-yellow color, almost free from smell or taste, except a sweetish, nutty flavor much esteemed by those who use it. The finest qualities are the Provence oil, Florence oil, and Lucca oil. Common kinds are easily detected by their brownish color and disagreeable smell. These are used for cooking. The Genoa is used for the same purpose in Europe, and the Gallipoli, which is still inferior, is used in cloth-dressing, Turkey-red dyeing, and other manufacturing purposes. The high price of the best qualities makes adulteration very tempting. The finest quality is obtained by gently pressing the fruit. All of the other liquid vegetable oils are obtained from seeds. Very large quantities of cotton-seed oil are exported from here to the south of France and other countries and imported again as olive oil.

The manufacture of olive oil must be commenced in the first half of November, because the fruit ripens at this time in the Provence. When it is once begun, it must be continued uninterruptedly, day and night, until the close of the harvest. According to circumstances, the harvest may continue during three or four months. Before the olives are brought to the mill, they have been previously carefully spread out upon the floors of well-ventilated storehouses, where they are allowed to remain for three days if the wind is south, and for four or five days if the wind is north.

The first operation consists in crushing the olives between two granite stones turning against each other vertically. The mass is then transferred, in rush-baskets, to an iron press, where it is subjected to a very gentle pressure. This produces the so-called virgin oil (*huile vierge*) to which the Provence oils owe their reputation. After this first pressing, the mass in the baskets is again comminuted and again subjected to a somewhat stronger pressure in a lever press. The product constitutes the well-known, com-

mercial finest oil. The mass is now removed from the baskets and again transferred to the mill, where it is completely ground up, when it is once more packed into the baskets and subjected to hydraulic pressure. During this latter operation the effect of partial fermentation is utilized by pouring boiling water on the mass in order to facilitate the separation of the oil. By this method of manipulation not only a larger yield of oil is obtained, but, at the same time, the deterioration of the larger portion of the oil contained in the olives is prevented, because only the very last pressing is performed with the aid of heat. And the last product is even superior to that obtained from fermented olives, since the latter assume frequently a musty, putrid odor which may contaminate the oil of the first pressing—a drawback which is avoided by using hot water.

Rape oil is the name which commonly covers the product of several seeds, such as rape, turnip and radish seed. The oil is of a clear brown color, sweet, with a mustard-like flavor; it is extensively used for dressing wool, and its illuminating power is excellent. It is often sold as olive oil.

Hemp seed yields a green oil and is extensively used in Holland in the manufacture of soft soap. In Russia it is used with different kinds of food, and is greatly liked by all classes.

Whale or sperm oil is obtained from the whale, the finest oil being taken from the reservoir behind the head. The oil of the sperm whale is of superior quality and known to the trade as sperm oil.

Tallow is a solid animal oil produced from the fat of oxen and sheep.

Lard oil is a pale yellowish or nearly colorless liquid obtained from lard, etc., used chiefly as a lubricant and also in the adulteration of olive oil. See *Lard Oil*.

OLEOMARGARINE was discovered by the French chemist Megé. It was bitterly opposed in this country, especially by the *American Grocer* and its owners in New York, but it has so completely overcome popular prejudice that the Thurbers are now ex-

tensive owners in the manufactories of what they once abused so roundly. Laws have been passed obliging those who sell it to brand all packages plainly as oleomargarine, but this has only served to show the public that it is so near an approach to butter as to need a distinguishing mark. It is made of clean, fresh fat, because it would be almost impossible and very expensive to make a creditable article out of fats which have the least taint. The Thurber establishment in New York city is said to turn out more oleomargarine than the whole State of New York does of butter. Many factories now exist in all parts of the Union.

OLIVES, in different varieties, are grown in almost every country. Used as a pickle, they are effective in promoting digestion. The fruit is produced in great profusion, and an old olive tree consequently becomes very valuable. It is chiefly from the pericarp that the oil is obtained, and not from the seed, as is generally the rule of the vegetable kingdom. Olive oil is very extensively used as an article of food in the countries where it is produced, and to a smaller extent in countries to which it is exported for medicinal and other uses. Olives gathered before they are quite ripe are pickled in different ways; they are, first of all, steeped in lime water, by which they are rendered much milder in taste. They are universally considered disagreeable at first, but soon become a relish, and in many parts of Southern Europe are considered a valuable article of food, dried as well as pickled olives being used. The wood of the olive tree is of great value, being beautifully marked and capable of being highly polished. A gum resin is obtained from the old stems, which much resembles the storax; it has an odor like vanilla, and is often substituted for that flower and used in perfumes.

ONION. A common garden vegetable, of the lily family, which is cultivated in great variety and supplied to the markets nearly all the year round. The Weathersfield onion is most commonly cultivated in this country and can be eaten raw or cooked in many ways. The onion was known to the ancients, being cultivated in Asia and Europe from the most remote times. The

earliest shipments come from the Bermuda Islands. In Spain and Portugal raw onions are often eaten like apples by the working men, and in conjunction with bread, they furnish many a dinner. They are highly nutritious, containing a large quantity of nitrogenous matter and uncrystallized sugar, with an oil resembling that of garlic.

The *Cultivator* has the following instructive article on this vegetable, which is so largely dealt in by grocers and produce dealers:

The onion is a native of the Levant and belongs to the lily order. Its use is very general in most portions of the world as an adjunct in cookery, for soups, broths, and the like. Many varieties are also palatable when cooked as vegetables by themselves. Among the principal and best varieties are the white or silver-skinned, yellow, and red, while onions have various names, according to their size, shape, season and flavor. The strong smell and taste of onions is due to a pungent, volatile oil, rich in sulphur. Moderate-sized onions contain ninety-one per cent. of water. Grown in warm places, the onion is milder and sweeter than when grown in colder climates.

Rut a few years ago the principal part of the onions raised in this country for market were produced in Massachusetts. In 1875 there were 1045 acres under the onion crop in this State, with an aggregate yield of 359,706 bushels, 195,530 of which were raised in Essex county alone, and 64,384 bushels in Middlesex county. In the former county, the town of Newbury produced 65,585 bushels, Danvers 25,996, Peabody 22,515, Marblehead 21,749, and West Newbury 16,057 bushels, while in the latter county the town of Arlington alone grew 27,194 bushels. Five or ten years ago, a buyer, by spending a day or two in Essex county at this season of the year, could form a pretty correct idea of the onion crop of the country, probable price, and all the facts necessary to form a judgment of the future of the trade. Now this has all changed. Less onions are raised in Massachusetts than formerly, and the supply from various other points has in-

creased most wonderfully, while the facilities for cheap and rapid transportation have made impossible any very wide fluctuation in the general market.

Western farmers, in some sections, have paid increased attention to the onion crop. From Davenport, Iowa, alone were shipped last year 40,000 barrels of onions. Large shipments are also made, both to Philadelphia and New York, from Cleveland, Ohio. Connecticut now raises many onions, mostly of the red variety, for the New York market. Thus, while but a few years ago Massachusetts supplied most of the Atlantic cities with onions, now the trade has been usurped by producers from other States. Boston market demands principally yellow onions; in New York red onions sell nearly as well as white or yellow; in Halifax and St. John red onions have the preference. There is but little difference in the quality, and the choice is largely a matter of taste or fancy; Western farmers raise chiefly the yellow variety. But few Western onions are shipped so far East as New England, except when prices are very high, since they come directly in competition with the Massachusetts supply, yet the former affect prices and prevent any material advance in our home lots, besides restricting the sale of our onions. With fertile, virgin soil and cheap freights, Western products everywhere compete with the products of New York and New England, and limit the number of farm crops which can be profitably cultivated in the latter section.

The first new onions are received about May 1st from Bermuda. They formerly came packed in palm-leaf hampers, holding from one-half to one bushel each, but now they are freighted in wooden boxes holding about one bushel each. The onions are large and flat, of a yellowish red color, though not of so deep a red as specimens of that variety grown in this country. Several cargoes were shipped direct to Boston last season, consigned to Bennett, Rand & Co., North Market street. The early arrivals sold at \$1.50 to \$1.60 per bushel, and some later receipts sold as low as \$1.10 to \$1.22. Bermuda onions are sweet, and form excellent eating.

Following this supply comes the Virginia crop of onions shipped from New York about June 15th. These latter shipments are principally of the potato onion, raised from the set and grown in clusters. The early market gardens of Virginia and Florida have played sad havoc with the market gardeners in this vicinity, or rather with those who have attempted to compete in the supply of early vegetables. During periods of scarcity and high prices, onions have been received in this market from Spain, Germany, Mexico, and Fayal. No onions are exported from this city, except, perhaps, a few to the British Provinces.

Forty to fifty years ago, and even more recently, the common red onions were principally sold fastened on a wisp of straw about the size of a man's thumb, which were called a "string" or "rope of onions," and sometimes a "bunch" of onions. They were tied, three or four dozen on this rope of straw with twine, by placing the foot on one end, on which end the producers commenced to tie the onions closely, round and round, until they reached the height of the knee. The largest ones were packed at the bottom and the small ones tapering to the top. However, when loosely tied, or the string broken, many onions were lost to the purchaser. In the olden time, in the New York market, a certain weight was demanded by law, while it appears in 1771 that a "bunch" or "rope of onions" should weigh at least four pounds net weight, under penalty of forty shillings.

At the present time desirable lots of onions are selling here at \$2.50 per barrel, the producer receiving about \$2.25. There is no activity at this price, and transactions on a large scale would need be quoted a shade off. Dealers are not in possession of information sufficiently definite from the Western sections to determine the future of the supply and value, although so far as known the Western supply is as large as usual. There is at least nothing to indicate a higher range of prices for the present. Our onion-raisers will hardly expect to receive war prices again very soon. One fall, during the inflation, onions rose to \$5.00 per barrel, while the following spring, owing to scarcity and specula-





ORANGE.

tion, onions were sold in Boston market as high as \$18.00 per barrel, About here onions have grown rather too rank, or, in other words, there has been so much growing weather that the vegetable has become rank and coarse. This will naturally interfere with their keeping quality. Onions, to keep well, must be well matured, with their tops properly dried off and then stored in a cool place. Small white and yellow onions for pickling are culled out of the regular growth, and sometimes sell as low as fifty cents to one dollar per barrel, though when really scarce they command nearly as much as the larger samples. Small onions should never be packed with the marketable lots.

ORANGES are now extensively cultivated in Florida and California, but are mainly imported from Europe and the West Indies. The commonest of all in our market is the Lisbon or Portugal orange; the mostly prized are the St. Michael and the Maltese or Blood orange. The bitter oranges from Seville are most esteemed for making marmalades. Orange peel is the rind of the orange carefully separated in half; after laying in salt water for a time, is washed in clear water and then boiled in the syrup of sugar, or candied, and sold for flavoring puddings. The small, unripe orange is preserved whole in sugar, or crystalized and sold as a sweetmeat. Those from Florida and the West Indies are generally sold in barrels, and those from Europe in boxes, varying in contents according to the size and quality of the fruit.

OYSTERS. The most common oyster in our market is the *Ostrea Virginiana*, found in all the beds of the Eastern States, perhaps the choicest of which are those from Chesapeake Bay, where they are cultivated very extensively. The total oyster trade, from Maine to California, has been valued at \$50,000,000 annually. They are out of season from May to September, when they are spawning, and are consequently thin and unhealthy.

"A valuable peculiarity of the animal," says one writer, "is the possibility of sustaining life for a long time after being removed from its native element; properly cared for, they may be kept

alive and in good condition for weeks; if they are placed in a cool, damp place, with the mouths up, and occasionally sprinkled with brackish water, they are said not only to keep alive but to fatten, this tenacity of life is owing to the liquor contained within the shells, which serves to sustain the respiratory currents; but when the liquor, through evaporation or other causes, departs, the oyster at once dies. When removed from the shell, by proper care, the eysters may be kept in an edible condition for several days; in this case it is necessary to exclude it from the accompanying liquor, for although this is the medium by which existence is sustained whilst in the shell, yet it has been found to have the opposite effect when it is removed from the shell; therefore, if it is desired to transport them to any distance, or otherwise dispose of them by which time is consumed before they are utilized, they are removed from their liquor and carefully washed, frequently as often as five or six times, until no particle of any substance but the oyster itself remains; thus prepared and kept cold and excluded from the air, they may be kept eight to ten days without injuring their flavor, or otherwise affecting their condition as an article of food."

Dr. William Roberts, in an interesting series of lectures on digestive ferments, published in the *Lancet*, says, regarding raw oysters: The practice of cooking is not equally necessary in regard to all articles of food. There are important differences in this respect, and it is interesting to note how correctly the experience of mankind has guided them in this matter. The articles of food which we still use in the uncooked state are comparatively few, and it is not difficult in each case to indicate the reason of the exemption. Fruits, which we consume largely in the raw state, owe their dietetic value chiefly to the sugar which they contain; but sugar is not altered by cooking. Milk is consumed by us, both cooked and uncooked, indifferently, and experiment justifies this indifference, for I have found, on trial, that the digestion of milk by pancreatic extract was not appreciably hastened by previously boiling the milk. Our practice in regard

to the oyster is quite exceptional, and furnishes a striking example of the general correctness of popular judgment on dietetic questions. The oyster is almost the only animal substance which we eat habitually, and by preference, in the raw or uncooked state, and it is interesting to know there is a sound physiological reason at the bottom of this preference. The fawn-colored mass which constitutes the dainty part of the oyster is its liver, and this is little else than a heap of glycogen. Associated with the glycogen, but withheld from actual contact with it during life, is its appropriate digestive ferment—the hepatic diastase. The mere crushing of the dainty between the teeth brings these two bodies together, and the glycogen is at once digested, without other help, by its own diastase. The oyster in the uncooked state, or merely warmed, is, in fact, self-digestive. But the advantage of this provision is wholly lost by cooking, for the heat employed immediately destroys the associated ferment, and a cooked oyster has to be digested, like any other food, by the eater's own digestive powers.

The Philadelphia *Press* discourses of this really national article of diet as follows: In 1599 it was put on record in Butler's *Dyet's Dry Dinner* that "it is unseasonable and unwholesome in all the months that have not an R in their names to eat an oyster." Now, this Butler was a Vicar of an English country parish, where oysters probably never went before they were three months old. It is not likely, therefore, that what Butler knew about oysters was worth knowing. Besides, these oysters were English oysters and not worth eating in a month which had an R in it. There is no reason why they should not be eaten except during the three or four weeks of spawning-time, which differs in different localities. Americans are a nation of oyster-eaters more than any other on earth. Everyone eats oysters. Who, indeed, has not heard with a thrill of gustatory pleasure, the familiar announcement of "Raw, roast, fried, scoloped, steamed, stewed and panned"? The very variety itself shows that they serve for any course. They are, hors d'œuvres, soup, fish, entre, and releve.

They are good in any part of the dinner, and the Chinese even use them as a sweet, smothered in sugar and in sweet vinegar. All summer long the oyster-eating American citizen has gone without his favorite article of food. Already the inquiry is made at the early restaurant, "Gotnyoysters?" Soon the rosy-cheeked opener will take his stand behind the counter, decked out in a neat white apron and newly-polished shirt-pin, holding his death-dealing knife in his hand ready to give a half-dozen Blue Points, Cape May salts, Coves, Saddle Rocks, or Providence Rivers, as the case may be. Before him is arranged a neat pile of the bronze-armored bivalves. They are piled up like bricks and surmounted by a crystal block of ice. Like a house of cards the pile diminishes before the opener. Then the revel begins. Early in the morning the small white oyster in its pearly shell and accompanied by the yellow lemon and dust of red cayenne is laid before the jaded palate of him who has been "going it a bit" the night before. To him the sight alone acts as a reviver, and after the row of shells is emptied he feels like a new man. At noon the milky stew holds sway. At night there is nothing more sought after by theatre goers than the oyster which lies concealed in a new dress of crisp brown batter. Meantime the bachelor sights the hissing and crackling of the bivalves as he rests on an open grate roasting with perfume appetizing enough to give a dyspeptic the desire of a Garagantua. And so it goes; from morning till night, from the first of September to the last of April, the oyster is in constant demand in the home, the hotel, and the restaurant. Little do other people know of the delights of the oyster. The English, with the exception of the Whitstable native, know not the real oyster flavor; the Dutch gather at Ostend, some little copper-bottomed things they call oysters; the French almost literally manufacture a tasteless imitation; the Italian eats a half-bred fresh-water mussel, and the other foreigners swallow a combination of these and call them oysters, but they are not. Nowhere else but here can be obtained that sweet, juicy, solid and nutty meat which has the delicate flavor of the pure breath of ocean.

Here alone the living animal between two shells combines "fish, flesh, fowl, and good red herring," all in one oyster. Here alone does he have his perfect sauce with him—that combination of ozone, peptone, and other scientific "one" which gives health, a good digestion and is as invigorating as the salt sea spray. Here alone is the oyster perfect, and his time to be swallowed is at hand."

OYSTER PLANT is a vegetable the roots of which are boiled or stewed like carrots, or half-boiled, or grated fine made into small flat balls and dipped in a batter, and fried like oysters, which they strongly resemble. The young flower stalks, if cut in the spring of the second year and dressed like asparagus, resemble it in taste.

OZONE. An active principle in or condition of the air which is just sufficiently understood to enable shrewd men to use the title to describe a mysterious process for preserving meats and all perishable goods. They do, in fact, preserve the goods for any length of time, but that part of the matter can be simply done by the use of various cheap chemicals, among which carbolic acid, in the proportion of a few drops to a gallon of water, and boracic acid and glycerine are prominent and common types. The fallacy consists in claiming that they use the ozone of chemistry. They talk shrewdly about the life and health giving properties of the air from pine woods, claim that the peculiar properties are due to ozone, and then claim to have packed the pure article into a bottle! Patent plans for arresting decay, or preserving green fruits, whether styled antiseptics, ozones, or any other titles, should be avoided by sensible dealers.

PACKAGES (empty) are returnable by many freight lines without charge. Regarding oil and liquor packages, the *Delaware County Democrat* says: "Retail grocers, and all others who retail coal or burning oils, and do not destroy the brand marks of the inspector, are liable to a fine of \$300 for each and every brand or package upon which the brand is not destroyed, and retailers of liquors are under a similar obligation. Carelessness

often omits the duty, and we have heard of an instance where such carelessness cost about a dozen dealers in a single town from \$50 to \$300 each, by a government detective happening to look in on the town."

PADDY is a name commonly applied to rice before the hull has been beaten off. This is the form in which it is brought into the cities of the South, where large mills are erected, whose business is confined to rice cleaning. On the plantations the hulls are beaten off the paddy by pounding and rubbing it in a mortar with a large wooden pestle, and this primitive operation involves great labor. A hand-mill to clean rice would be worth millions to its inventor, but thousands of attempts at inventing one have not yet secured a practical result.

PAIL. A wooden vessel, of different shapes, now made by machinery and varying in price from the best brass-bound cedar stock to the cheapest two-hoop soft pine article. They should be kept out of the sun, as they are liable to slacken (especially the cheaper grades) and fall apart.



PALM OIL is made from the fruit of the palm tree, universally admitted to be one of the best materials for soap-making. A soap made purely of Palm Oil, with barely enough alkali to produce saponification, is very superior for the toilet use and the bath, for shaving and the teeth. Very little of the soap that is manufactured and sold under the title of Palm Soap is genuine. It is mainly imported from Africa, and especially from Liberia.

PAPER. A thin and flexible substance, manufactured from vegetable matter reduced to a pulp by means of water and machinery. It is made up in reams, each of which contains twenty quires of twenty-four sheets each. Paper of all kinds, especially that used by the grocer, such as straw wrapping-paper, is sold by count and is usually short. An excellent butter paper is now sold

in convenient parcels. Straw paper should be kept in the cellar or where it will not dry out, as it becomes very brittle when too dry. Paper made of good materials is easily tested by its strength in comparison with its weight. Paper was first made at Nuremberg, in the year 1390, but not in England until the year 1450. There is no doubt that it was known in China more than 2,000 years ago.

PAPER BAGS. There are many different bags in the market, from the old-fashioned hand-made bags to the square-bottom, and then the machine-made square-bottom. They are made in all qualities, those most desirable being made from tough manilla paper. (See Bags).

PARAFFINE is a white, waxy substance, free from taste or smell, which will not burn except in conjunction with a wick, when it gives a bright, smokeless flame. It is these qualifications which give such advantages to candles made from it. Large quantities of paraffine are used for the apparently trivial and unimportant purpose of manufacturing chewing-gum. The extent to which this simple article is sold by wholesale confectioners must be simply enormous, one manufacturer of chewing-gum alone using about 70,000 pounds of paraffine in a single year. Confectioners also use it considerably to impart to certain of their confections a high gloss or lustre.

PARA NUTS. See *Brazil Nuts*.

PARIS GREEN is a chemical compound very much used in coloring, but owing to its deleterious effects on the health of all who come within its reach, its use is much condemned. It was found to be the only effective destroyer of the Colorado beetle or potato-bug, and is sold very largely for that purpose.

PARMESAN. See *Cheese*.

PARSLEY is used generally for ornamenting meats, flavoring soups, and is very nutritious and stimulating. The bruised leaves are sometimes used for poultices.

PARSNIP (*The*) has long been cultivated for its root, and is known to the trade. It is excellent food for cattle in winter.

PARTNERSHIP. A partnership exists wherever two or more persons combine their labor or capital, or both, with the intention of securing the profits to be produced thereby, the terms upon which this is to be done are regulated by the agreement of the parties, and are generally, although not necessarily, expressed in a written instrument, called the Articles of Partnership; of course, their private arrangements, although binding on themselves, cannot prejudice third parties, and are, therefore, in many particulars not binding upon them. Partners are agents for each other, and any one may bind the firm in transactions within the scope of the firm's business, and each one, whether he be known to the world or not, as in case of a dormant partner, is individually liable for the firm's debts. No arrangements among the partners themselves can alter these facts to the prejudice of third parties. Hence, no one should enter a partnership without reflecting that he commits the whole of his fortune to the integrity and intelligence of his associates, and, on the other hand, any one dealing with a partner in any matter within the scope of the firm's business, knows that he has the security, not only of the firm's property, but of the property of the individual partners, although it is a general rule that only those who share in the firm's profits can be held liable as partners, still one without any share may be made liable by allowing his name to be used or himself to be held out to the world as a partner. It is, therefore, essential that one retiring from a firm should not only advertise the dissolution in the papers, but should send special notice of his retirement, by circular, to all persons who have been in the habit of dealing with the firm. There are statutes in most of the States which enable persons to contribute money loans or personal property, as special partners, and limits their liability to their actual contribution.

PASTES are forms of prepared flour similar to macaroni, but not coming under the heads of macaroni or of vermicelli. They are made in many pretty forms, such as letters, animals, stars, and fancy forms, and are generally used in soups. In confection-

ery, pastes are stiff forms of candy, such as jujube paste, fig paste, etc. Fish pastes are prepared from anchovies, bloaters, etc. Furniture paste or cream is composed of beeswax and turpentine.

PATE'S DE FOIES GRAS. A French dish, made, as the name states, in the form of a pie, composed of fat geese livers. They are usually imported and are eaten either hot or cold. It is said that the geese are kept by the manufacturers in heated rooms and crammed with food to enlarge and fatten their livers.

PATENT MEDICINES. See *Medicine*.

PEA (*Th₂*) is one of our most valuable table vegetables, its nutritious character making it very desirable. When purchased in the pod they should be kept in a dry, cool place, and never allowed to get damp or warm. They are very extensively canned both in this country and France, and vary very much in quality, many of the cheaper packings being dry peas soaked in water and canned, a practice often resorted to when the market has advanced to tempting figures. The *Trade* of Baltimore says of the pea:

Our garden pea was cultivated by the ancient Greeks and Romans, but there is no proof that it was known in earlier times to the Egyptians. The introduction of the pea into England is supposed to have been by the way of Holland or France, in the time of Henry VIII. Probably none of our garden vegetables present so many varieties as the pea, though careful experiments show that many of the named kinds are so like one another as to be undistinguishable; our seedsmen offer from twenty to forty varieties, and the lists in the English catalogues are still larger. There are two very distinct classes of peas; the common pea, the best known and by far the largest class, of which the unripe seeds only are eaten, and the eatable podded, also called sugar, skinless and string peas, in which the pods have not the tough, parchment-like lining present in those of the common kind, but are tender and succulent. In the latter the pods are larger than the former, and are used in the green state in the same manner as snap or string beans, the young pod being cooked with the seed; there are but few varieties of this class, and they have not obtained the

place in our gardens which they had in those of Europe. The common garden peas are of two kinds, one with the seeds, whether young or ripe, quite spherical and smooth, and when ripe yellowish white; the other, known as the wrinkled or marrow pea, have even when ripe a wrinkled surface, and when mature retain more or less of a greenish shade; they are usually much larger than the round peas, and are flattened at the sides by mutual pressure in the pods. These two kinds are still further subdivided into dwarfs, which are from six to eight inches high and need no support, and tall kinds which grow from two to six feet high and require brush or other support. Probably no vegetable differs more in quality than this, owing to variety, degree of maturity, and length of time it has been gathered. The wrinkled varieties are much sweeter and better flavored than the round, but on account of the greater earliness of the round, the first peas of the season are always of those kinds; an experienced person can tell by feeling of the pods when they are in proper condition to pick for the table; if too young, the nutritive matter in the seeds is very small in proportion to the hull, while too great maturity is accompanied by firmness and lack of flavor.

PEACH (*The*) is cultivated to a very great extent in New Jersey, Delaware, Maryland and the South, the principal markets being Philadelphia and New York. They are sold in baskets which vary very materially, there being no regulation size, and it is therefore necessary for the buyer to exercise care in the selection in order to get full value. The main distinctions in peaches are the white and yellow varieties, and those with clingstones and free stones. Canned peaches vary in size and quality; they are divided into two distinct grades, table peaches and pie peaches. Peaches are also evaporated and sold by weight; but as they lose some of the flavor in the process, they are not very popular. Peaches are imported from Bermuda at the end of April, when they realize fancy prices, and come from the South during June, and from New Jersey about July 20th. The season is at its height in the middle of August and ends in October.

PEACH BRANDY is obtained by distilling the juice of the fruit. Its consumption is rapidly diminishing.

PEACH WATER, obtained by bruising the leaves into a pulp with water and distilling, is used for flavoring and in medicine as a sedative and vermifuge.

PEANUTS. The plant which produces the fruit popularly known as the peanut in this country, and as the groundnut in Europe, is one of a class which bury their pods in the earth, where they ripen, instead of raising them into the free air. In order to effect this, the flower-stalk, after the flower, along with the very young pod, has passed away, gradually curves downward, and at length forces its end perpendicularly into the soil. Having buried itself sufficiently deep, the pod then begins to swell, and when ripe becomes the oblong, rugged, pale brown fruit, usually containing two seeds, so well known in the markets of this country.

The peanut is now found in a state of cultivation all over the hottest part of the tropics. It was unknown in the Old World until the discovery of America, though now it is very generally grown in the United States, India, the West India Islands, and in different parts of Africa. For the purposes of commerce it is principally raised on the west coast of Africa, in different quarters, from Senegal to Sierra Leone and the Gambia. Marseilles, in France, is the chief port to which they are shipped, though in limited quantities they find their way to this country, principally as an article of food. Commencing with an export in 1837 of 671 tons, valued at \$40,000, the average annual shipment of peanuts from the Gambia between 1850 and 1860 was 11,196 tons. In some years, as in 1871, the total export reached nearly 17,000 tons, the bulk of which was sent to France. Owing to disturbances, the quantity exported from the Gambia fell off somewhat in 1872, the shipments being 13,000 tons, valued at \$700,000, the trade employing 15,000 tons of shipping from Bathurst. It was a French house at Marseilles that first thought of introducing this substitute for olive oil. The experiment commenced with a few hundredweight of peanuts, and now the imports into France ex-

ceed 55,000 tons of an oil-seed unknown to commerce forty years previously.

The native African has unfortunately introduced of late years the pernicious system of beating or threshing, instead of picking by hand, whereby the nuts are mixed with leaves, stalks, stones, and other substances, causing large deductions in both the French and American markets. Hand shelled nuts are largely used for eating, and by confectioners, both in Europe and in this country, but those machine-shelled are only fit for oil-crushing and cattle-feeding purposes. The oil-cake of the nuts, when pure, is highly esteemed for its fattening properties, horses, cattle, pigs and poultry being very fond of the peanut in its natural state. A heaped imperial bushel of the nuts weighs from twenty-five to thirty-two pounds. Divested of their shell, the kernels furnish as much as forty-five to fifty per cent. of oil. Besides the great value of its seeds for oil, this plant is also a good fodder herb, since it is very productive and yields a quick return. A light, somewhat calcareous soil is best fitted for its growth. On such soils fifty bushels may be obtained to the acre, though in some parts of the United States the yield is from eighty to one hundred and twenty bushels an acre. In tropical countries half a ton weight of seeds or nuts is obtained per acre.

Peanut oil is used for alimentary purposes, for the adulteration of olive oil, and for cloth-dressing, though its chief use in Europe is for the manufacture of soap and for lubricating machinery. As a lamp-oil it burns longer than olive oil, although its illuminating power is less. Compared with ordinary burning oils, its power is feeble, and it will hardly be able to hold its own against the rapidly-increasing use of kerosene oil in the Old World. It has the advantage, however, over other vegetable oils, of keeping a long time without becoming rancid. In Europe it is usually found that a bushel of peanuts produces one gallon of oil when expressed cold, while if heat be applied, a larger quantity is obtained, but of inferior quality. In Brazil the seeds are parched for food, while the oil is used for cooking, medicinally for rheumatic affections,

and for lighting. The roasted seeds are sometimes used as a substitute for chocolate, since they abound in starch as well as oil and a large proportion of albuminous matter. Economists urge the more extended use of peanut meal as an important article of food. Dr. Muter gives the following analysis of this meal: Moisture, 9.6 per cent.; fatty matter, 11.8; nitrogenous compounds or flesh formers, 31.9; sugar and starch, 37.8; fibre, 4.3; and ash, 4.6 per cent. From this analysis it is claimed that the residue from them, even after the expression of the oil, far exceeds that of peas, and is even richer than lentils in flesh-forming constituents, while it contains more fat and more phosphoric acid than either of them. Although in the raw state it possesses a somewhat harsh odor, this flavor entirely passes off in cooking. This seed is held in great estimation for eating in the United States, as the flourishing sale-stands at the street-corners indicate. Nansemond and Isle of Wight counties, in old Virginia, bear off the palm for raising the finest peanuts in the Union, their flavor, size and quality being far superior to all others. The crop-year begins about October 1st and ends in the following September. Fully 550,000 bushels are annually sold in the city of New York alone. Previous to 1860 the product in this country did not amount to more than 150,000 bushels, nearly five-sixths of which were grown in North Carolina, dependence being mainly on the imported supply, but now the home crops nearly supply the demand. It was estimated in 1870 that Virginia, Tennessee, Georgia, and Carolina, together sent over 1,000,000 bushels to market, of which one-fourth went to New York. American-grown nuts command far higher prices per bushel than those imported from Africa.

PECAN NUTS. A species of hickory nut, generally grown in the West and South of the United States. They are agreeable in flavor, and arrive about December. The nuts are oblong in shape, and have a smooth, thin shell and very easily separated meat. They are seasonable until April.

PEARS. Few fruits have been as carefully cultivated and improved as the pear. It appears in countless varieties in our

markets, varying in size from the little brown Seckel pear to the large Bartlett. The different varieties ripen at various seasons, and the consumption of the fruit extends over much the same time as that of the apple. Very fine pears are now shipped in crates from California and find ready sale in our Eastern cities.

PEPPER. The common kinds, black and white, are, in reality, one and the same, the only difference being in the preparation which it undergoes. Black pepper is simply the dried fruit of the



tree, and though not so agreeable to the eye as white, possesses more of the essential flavor of the spice. White pepper is prepared by putting the pods in water and removing the black or outer covering; sometimes it is bleached afterwards to make its appearance better, consequently the degrees of quality

are very numerous. Long Pepper is entirely another species, used for pickling. It is more pungent than either white or black pepper, Jamaica pepper, or pimento; is used in the manufacture of allspice; it is larger than black pepper. Cayenne pepper, sometimes, called "chillies," is the powder of what is commonly termed Cayenne pods, produced by grinding; when pure, is the most pungent of all. It enters largely in the composition of botanical medicines.

PEPPERMINT is an essential oil distilled from the mint plant. New York and Michigan produce over two-thirds of the peppermint oil of the United States. It is used for flavoring and in medicine. (See article on Mint.)

PERFUMED LYE is a superior lye, in a fine powder, perfumed so that it makes scented soap. It is covered by patent, formerly held by George T. Lewis, and is now manufactured by the Pennsylvania Salt Company.

PERSIAN INSECT POWDER is the dried and pulverized flowers of the Pyrethrum, a plant found in Asia. It is sometimes termed Dalmatian Powder. It is very fatal to all insects, but not poisonous to animals, and is, therefore, a very valuable article. It

is usually scattered in cracks in the wall by means of a small bellows or air-gun, which can be obtained from the dealers.

PETROLEUM, or coal oil, is found in many parts of the world, and is believed to be a result from the decomposition of huge masses of antediluvian fish, in the same way that coal was produced by the decomposition of trees and plants, or to be the actual distillation from coal when the rocks were hot. The Indians used it as a liniment and it was sold as Seneca or Rock Oil for many years before processes for refining it were devised. The crude article had been used in past ages in Europe and Asia, but in that state it was not as economical as many of the vegetable or animal oils. In 1855 the perfection of refining began to render it really valuable. In the process of refining the crude oil various products are secured, such as naphtha, benzine, gasoline, paraffine oil and wax, and the refined kerosene or illuminating oil. As petroleum is highly inflammable, laws have been passed in different States which restrict its sale for illuminating purposes to certain degrees of "flash" or fire-test. It is safe at 130° and is said to lose some of its qualities when refined to a higher grade. The Standard Oil Company has monopolized the oil business of the United States for several years, and dictates prices and terms very generally. Dealers should look well to the gauge of their oil barrels and destroy the inspector's brands on all the empty packages, or they may lose in the gauge and be fined by the government.

To Test Coal Oil. Put a *small* quantity of the oil to be tested in a cup, set in a tin of water and slowly warm the water, noticing the degree of heat in the oil by keeping a thermometer immersed in it. When the temperature rises, put a lighted match (an electric spark is best) quickly over its surface at intervals. As soon as the gas or vapor given off by the heated oil flashes or burns, its test is determined; that is, if it ignites when the mercury stands at 120°, it is an oil of 120° flash test. This is a simple and reliable mode of proving the quality of oil.

PICKLES, as known to the trade, is the usual term applied

to the numerous kinds of vegetables preserved in vinegar and flavored with various spices, such as mixed pickles, gherkins, cauliflower, cabbage, piccalilli or Indian pickle, chow-chow, etc. Large quantities of pickles are imported, but most of our supplies are from this country (see Capers, Olives). Chow-chow and piccalilli are prepared by the mixture of a quantity of the flour of mustard with vinegar. One of the noticeable differences in flavor between American and English pickles is caused by the general use of malt vinegar in Great Britain. The greening of pickles is a very delicate operation, and novices at the business turn out a dark, unsightly article. The admixture of mustard makes them look muddy, except when very expertly done.

To Test Pickles. The use of copper to brighten pickles is highly injurious to health, and its presence can easily be detected by putting a steel knitting-needle into a jar of pickles, when, if much copper is present, the needle will soon become coated with it. If diluted ammonia is poured into a bottle containing a doubtful pickle, the slightest trace of copper will cause the ammonia water to turn blue.

PIE PLANT. See *Rhubarb*.

PIMENTO. See *Allspice*.

PINEAPPLES are imported mainly from the West Indies, but are also grown in Florida. They vary in size from two to twelve pounds, depending on the care in their cultivation. When ripe they are considered the most delicate and richly-flavored fruit



in the market. They are canned, both in the West Indies and the United States, and are highly esteemed. Grated or sliced, they retain their flavor in the cans very perfectly, and are shipped to all parts of the world. They are also very generally used in home-made jellies and preserves. They arrive in the month of April and con-

tinue until September.

PIPES. Among the many pipes made for smoking tobacco the common clay article is first, then follows those manufactured

from wood, such as briar-root and cherry. The most valuable pipes are the meerschaums manufactured from a peculiar mineral found in alluvial deposits just below the soil in many parts of Europe and Asia. When first dug it is soft and is used as soap by the Turks and others, making a fine lather. It hardens on exposure to the air, being sometimes found on the seashore washed up by the waves. It has been poetically, but erroneously, called the petrified foam of the sea.

An authority on pipes says: "By far the choicest and finest clay pipes come from France. They are generally soft and rather creamy in their appearance, and easily absorb nicotine. They are gotten up in all kinds of fanciful styles and designs, large bowls with heads of public characters upon them being in especial demand. The clay pipes of T. D. type, which are in the most extensive use in this country, are imported from Glasgow, Scotland. They are sold at wholesale at from one-half to a cent apiece, and at retail from one to two cents. Retailers, however, make little or no profit on these pipes, as the loss from breakage, poorly-baked pipes, etc., is necessarily quite heavy and has to be borne by them. Dutch clays, with rather small bowls and long slim stems, are still somewhat in demand in this country. Clay pipes are made to some extent in this country, there being several factories in Philadelphia and Baltimore and one or two in Canada. The red clay pipes are mainly made in Providence, Rhode Island. The French pipes, however, as we have said before, are the finest in the world. The duties on French clays are quite heavy, and the demand for them is somewhat limited compared with the American and Scotch article. The Woodstock clay is a great favorite with many smokers, especially in the rural districts. The Germans and French manufacture a great many varieties and styles of pipes from red and other colored clays. Gambier bowls made from French clay and handsomely decorated in colors, meet with a steady demand among a certain line of customers. The trade for porcelain bowls, so popular in Holland and Germany, is very limited in this country, and is confined almost solely to the

children of "der Vaterland." Americans object to them on the ground that they are not porous and easily become heated in smoking."

PINT. A measure holding one-eighth of a gallon. (See Weights and Measures and Sealer of Weights and Measures.)

PLACARDS. A very striking mode of advertising, and one which, if adopted and carried out judiciously, will result in a good return for money invested. Grocers will rarely find it an economy to make their own placards, as show-card painters will supply numerous designs of great excellence at very low prices, and nothing disfigures a store so much, or gives the impression of a poor quality of goods more quickly than a clumsy-looking placard. Have good ones or none.

PLANTAIN. A fruit which greatly resembles the banana (which see).

PLUM (The) is a fruit largely cultivated all over the States, the most popular varieties being the Washington, Huling's Superb, Bleecker's Gage, Jefferson, McLaughlin, Prince, Yellow Gage, Chickasaw, Beach, and Blackthorn. Green Gages ripen about August 15th and last until October. Some other varieties ripen earlier. French plums are imported largely from Europe and are known by various brands. They are prepared for the market, as soon as gathered by being dried by the action of the sun's rays until they become quite soft. They are then collected and put in a heated oven and further dried. When sufficiently cured they are made round by the stone being turned round and the fruit pressed at the ends, and are then packed in the desired form for the market. Prunes are prepared similarly, but not with such care, and from a lower grade of fruit. (See Prunes.)

PLUM PUDDING. This palatable dish has been made the theme of many a story and many a song, and now becomes more popular than ever in a canned form. It is to day the most convenient dessert dish that the grocer can supply to the puzzled housekeeper who has to prepare for the coming guest. Large quantities of our American Plum Puddings in this form are sent

to England thus supplying John Bull with his national dessert in improved shape. It comes in 1, 2, 3 and 4lb. cans. Atmore & Son, Phila., put up a very superior article.

POLARISCOPE (*The*) is an instrument to determine the amount of saccharine contained in sugars, by ascertaining the variations with which they polarize light. It may be considered the best way of obtaining the comparative value of raw sugar, and was for some time in use in the custom house, under the administration of John Sherman, but was resisted by the sugar importers of New York as illegal, and was so decided by an action at law, the court ruling that the test of quality must be according to Act of Congress, the "Dutch standard" of color, thus the Treasury had to refund a considerable amount of money paid by importers. There is no doubt, however, if Congress were to enact a law authorizing the adoption of the polariscope as a test, that it would furnish the most reliable method of determining the intrinsic value of sugar.

POLENTA forms the main food of many Italian peasants, and is a flour ground from chestnuts. It is highly nutritious, and is cooked in the same manner as our American cornmeal cakes or pone.

POLLACK. An Atlantic fish, very plentiful, and usually salted and sold as codfish, to which family they belong. They are inferior to the genuine cod.

PORTER. A kind of malt liquor made of high dried malt, which derives its dark color from the burnt malt or burnt sugar. It is said to be fattening in its qualities.

POP-CORN is any kind of corn or maize, especially those kinds of grains which are small and compact, which are used for popping. The corn, which has been burst by heat so that it exhibits the inner kernel, is sometimes eaten with salt and milk and still more frequently sugared and eaten as a confection. The articles known as Snowdrift and Snowflake are simply ground pop-corn and come in half-pound boxes, and are eaten as a breakfast or supper dish, with milk and sugar, or without sweetening.

PORK. The pre-eminent position occupied by Chicago in the pork trade is acknowledged universally, therefore, it may be desirable, in dealing with this subject, to give the regulations enforced there in the curing, packing and branding of this article.

A number of inspectors are appointed by the Board of Trade, the payment of these inspectors depending on the buyer or seller. If, on examination, the article offered for sale does not pass the standards as mentioned below, the cost of inspection is paid by the seller; but if it passes, the cost is borne by the purchaser. The rules and regulations of the inspection are as follows: It shall be the duty of the inspector, as requested by the owner, either at any packing-house, warehouse, or in yards provided by the inspector, to inspect according to the classification and quality authorized for standard packing; two hundred pounds of meat, with abundance of salt, to be re-packed into each barrel; cooperage to be put in good order; each barrel of provisions that is sound, sweet, and free from every defect to have grade and date of inspection branded thereon; and any portion that is defective to be branded, in like manner, "rusty," "sour," or "tainted," as the case may be, across the regular inspection brand

Mess Pork shall be packed from sides of well-fatted hogs, cut in strips not exceeding six and one half inches wide and flanked according to diagram as nearly as possible, and not back-stripped, 196 pounds of green meat, numbering not over sixteen pieces, including only the regular portion of flank and shoulder cuts; four layers to be packed in each barrel, with not less than forty pounds of Turk's Island, St. Utes, or Trepanne', or 45 pounds of other good qualities of foreign or domestic coarse salt and clear brine as strong as the salt will make it (see Plate No. 1).

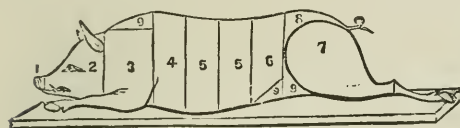
Clear Pork shall be packed from sides of extra-heavy, well-fatted hogs, cut, selected and packed in the same manner as *Mess Pork*, the backbone and half the rib next it to be taken out.

Extra Clear Pork. Same as clear, except that all the ribs and backbone shall be taken out.

Mess Ordinary, or Thin Mess. Of hogs reasonably well-fatted

too light for Mess Pork, cut, selected, and packed in the same manner as Mess, no restriction whatever as to the number of pieces to the barrel.

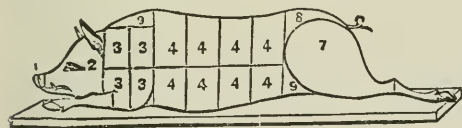
Rump Pork. Rumps should be trimmed with only enough taken off to make them neat and smooth, the tail cut off close; each barrel to contain 200 pounds of green meat, packed with the same quantity and quality of salt as Mess Pork.



1. Snout. 2. Head. 3. Shoulder. 4. Shoulder Cut. 5. Middle Cut. 6. Flank. 7. Ham. 8. Rump. 9. Lard.

No. 1.

Prime Pork shall be packed with a header of side cuts, the regular width, $3\frac{1}{2}$ heads. It may have three rumps, with the balance shoulder cuts. The shoulders should have the rib in them and cut into three pieces each, according to the diagram, the foot to be cut off above the knee and the shank cracked near the shoulder. Head to be split through the brain, and tongue, snout, and ears cut off and brains removed; each barrel to contain 200 pounds of green meat, and to be packed with the same quantity and quality of salt as Mess Pork, heads to be soaked before being packed.



1. Snout. 2. Head. 3. Shoulder pieces. 4. Prime Shoulder pieces. 5. Shoulder pieces. 6. Ham. 7. Ham. 8. Rump. 9. Lard.

No. 2.

Extra Prime Pork shall be made from heavy, untrimmed shoulders, cut into three pieces, according to diagram, the leg to be cut close to the breast; to be packed 200 pounds of green meat in each barrel, with the same quantity and quality of salt as Mess Pork.

Prime Mess Pork shall be made of shoulders and sides of nice, smooth, and fat hogs, weighing from 120 to 170 pounds each net, regularly cut into square pieces, as near 4 pounds each as possi-

ble, the shank to be cut off close to the breast; each barrel to contain 200 pounds of green meat, in the proportion of 20 pieces of shoulder and 30 pieces of side cuts, and to be packed with the same quality and quantity of salt as Mess Pork, with the addition of 4 ounces of saltpetre. The prime pieces shall be cut free of blade bone. The shoulder pieces not to exceed 90 pounds in each barrel. When re-salted, the brine shall be drawn off and new brine added (see Cut No. 2).

Pickled Hams and Shoulders. The number of pieces and green weight meat must be branded on the head of each tierce.

Long, short, clear and back are packed in the months of June, July, August, and September by some houses, 200 pounds in the barrel, and will not gain in weight unless put in the ice-house and then goes back when exposed to a warm temperature; 180 pounds, packed in cool weather, when thoroughly salted, will weigh out 200 pounds, and often overrun from 5 to 10 pounds; 180 pounds is the quantity of fresh pork put in barrels in cool weather by all the leading packers. It is known that some pack 190 pounds to the barrel after the pork has been salted on the premises of the packer; hence, there is no gain, and the retailer is loser. It is best to buy of the principal packers whose reputations are fixed.

PORRIDGE. A preparation made from the meal of any kind of grain by adding water and boiling until a pulp is formed.

PORT WINES. A red wine originally exported from Oporto and Lisbon, made from grapes. When perfectly pure the wine does not acquire its full strength and flavor until it has stood for years. Its value, therefore, increases with age (see wines). It is one of the most extensively imitated of wines, being in small supply and of a value which pays to produce artificially.

POTASII is the solid substance or ash which remains in the pot in which is evaporated the water impregnated with wood ashes. When deprived of its carbonic acid it is known as caustic potash. It is used in making soap, soap powder, and all washing preparations.

POTATO. The potato is a native of the elevated valleys of

the Andes in Peru and Chili, and is found as far north as Mexico. It was taken to Spain after the discovery of America, and cultivated in gardens as a curiosity. The tubers being small and not edible in its wild state, it attracted no attention. In 1586 Sir Walter Raleigh introduced it into England, and is credited with bringing it from Virginia; but of this there is no evidence. Its cultivation in the cool, moist summers of Ireland soon developed large tubers, which were found to consist chiefly of starch.

A successful experiment was made in the use of the tuber as food, but this was met and combated by a number of learned men and several works were written and published to prove its poisonous character. It belongs to the great Nightshade family, all of which are poisonous. This indictment was true, but they had not yet known that a poisonous plant may bear a fruit or tuber not only harmless, but very nutritious. This prejudice prevented the use of the tomato till within the last forty years. The truth is, both these vegetables being of the Nightshade family, are poisonous in stem, leaf, and flower, but this property does not extend to the tuber of the one nor the fruit of the other.

While on this subject, it is proper to say that solanine—the poisonous principle in this family, is sometimes developed in the potato, even to a dangerous extent. If the tubers, while growing are uncovered, they will assume a green appearance and become poisonous from the presence of solanine. The same effect, in a minor degree, is produced in the sprouting of potatoes. If these are used in cooking they should be sliced and placed in cold water an hour or two before being cooked. Otherwise sprouted potatoes are unwholesome food.

The potato is a tropical plant, but its tuber-producing quality is a Northern modification of the plant, and in this quality it is improved by the cool summer of the north, and is successfully cultivated in the Arctic regions, and with a decided improvement in the quality of the crop and generally in its yield. The crop is sometimes injured by the intense heat of July and August, even at the fortieth degree of latitude. The tendency of the tuber to degen-

erate in warm climates will suggest the precaution of occasionally renewing the crop by planting northern potatoes.

How to tell a good potato as well as can be done without cooking. Take a sound potato, and, paying no attention to its outward appearance, divide it into two pieces with your knife, and examine the exposed surfaces. If there is so much water or juice that seemingly a slight pressure would cause it to fall off in drops you may be sure it will be soggy after it is boiled. These are the requisite qualities for a good potato, which must appear when one is cut in two: For color, a yellowish-white; if it is a deep yellow the potato will not cook well; there must be a considerable amount of moisture, though not too much; rub the two pieces together and a white froth will appear around the edges and upon the two surfaces; this signifies the presence of starch, and the more starch, and consequently froth, the better the potato; while the less there is the poorer it will cook. The strength of the starchy element can be tested by loosing the hold upon one piece of the potato, and if it still clings to the other this in itself is a very good sign. These are the experiments usually made by experts, and they are ordinarily willing to buy on the strength of these turning out well, though these tests are by no means infallible.

The first new potatoes generally arrive in this market about the first of April. It is essential for keeping potatoes that they should be placed as soon as gathered in a cool and dark place. The different varieties are constantly changing. A certain variety may be the best obtainable for a time, and gradually, as it were, become used up, when another variety will be produced with like success and failure. Thus, many varieties that were popular years ago have now become almost extinct. (See sweet potatoes.)

POULTRY. To select good dressed poultry see that the eye is bright, feet soft, moist and limber and the body perfectly free from bruises or stains. Young poultry should have a breast bone no harder at the lower end than the gristle of a man's ear, and

after it becomes too stiff to bend at all the fowl is generally tough and old.

POULTRY SEASONING is a preparation of spices and herbs already mixed for use in stuffing fowls. It meets with considerable sale during the fall and winter holidays.

POTTED MEATS. Various meats rendered highly nutritious by evaporation, packed in convenient jars and ready for table use.

POWDER. See *Gunpowder*.

POWER OF ATTORNEY is a writing, under seal, giving authority to one person to act in the stead of the maker of the document. It may be to do a single act, as to sell one property or collect one debt, or it may be to carry on an entire business according to the terms it contains. The first would be a special authority and the latter a general one.

The act of the attorney binds the principal, when done within the limit of time and authority set forth in the power of attorney, and the attorney will not be liable himself to third parties if he acts, in such cases, in the name of his principal.

Persons under age and married women cannot appoint attorneys, but may act as attorneys for others. A power thus given may be revoked at any time, and always expires at death except in cases where the attorney holds a personal interest in the matter, as in the authority to transfer or sell stocks to cover a debt due him by the principal.

PRESERVES. A term applied rather indiscriminately to any kind of fruits, preserved by any means and for any use. Fruits used by confectioners are preserved by boiling the fruit with from one half to its equal quantity of sugar. Preserves made of the juice only by carefully straining it from the solid portions and boiling it until it becomes thick when cool, are known as jellies. The fruit is also boiled whole in sugar or syrup, and allowed to crystalize and are sold as crystalized or candied fruits.

Very good qualities of preserves are put up in 5 and 10 pound

pails for the trade, and retailed by the pound. Care should be taken to keep such goods closely covered, for one fly spoils the ointment of the apothecary and ruins a grocer's good name. A wooden spoon should be used to take them out, as metals are apt to turn their bright color to a duller hue.

PRUNES. The prunes of commerce are the dried plums of certain cultivated varieties, and are obtained from France, Spain, Austria, Hungary, Germany, Servia, Bosnia, and other sections of the Turkish empire. The best prunes are obtained from Bordeaux, the chief commercial city in the south of France, and are grown and cured by the farmers of that section in a territory of some 40 to 50 miles radius from that city.

There are different grades of prunes raised in France and elsewhere, and the quality of these depends to a considerable extent upon the place where they are grown, the stock grown from and the season in which they are raised. Like our apples here, the prune crop elsewhere varies with the season, and yields not only in quantity and quality, but in price. Various modes of curing are resorted to. The fruits are not gathered until the dews are dried off them by the sun. They are then picked by hand and spread in shallow baskets, which are kept in a cool and dry place. When they become soft they are shut up close in spent ovens and left for 24 hours. They are then taken out and replaced after the ovens have been slightly re-heated. On the following day they are taken out and turned by slightly shaking the sieves on which they have been laid. The ovens are heated again, and they are put in a third time, and, after remaining twenty-four hours more, they are taken out and allowed to get quite cold. After some further manipulation, they are submitted to oven heat twice more, and then packed into boxes or jars for sale. This treatment is only accorded to the finer kind of prunes, though some of them are still further treated in different ways, being given a dark color by a harmless pigment, and preserved and kept moist for packing in boxes by the addition of a coating of glycerine. This is to please the eye solely, for it adds nothing to the flavor or

quality of the fruit. The drying process requires considerable skill, the aim being to develop the saccharine principle of the fruit without, at the same time, changing its flavor or taking from its fruit-like quality—so that, in fact, it may be ready at any time for use on the table or in the sick-room, for prunes are often ordered by physicians for their cooling and aperient qualities, as also as a vehicle in which to take unpalatable medicines.

French prunes of the better grades are put up in tin boxes and glass jars, which are hermetically sealed, labeled, and are then ready for market. If the season has been good, the quantity of large and prime fruit is considerable. The largest fruit and of the highest grade or quality of French prunes, number about forty to the pound. From this they run up in number and down in grade. to 130 to the pound. The figures 50 to 55—80 to 85, etc., which occur in price-lists, refer to the number of prunes it takes to make one pound. The best prunes are said to come from the cultivated trees which are grafted upon the wild plum stock. The common sorts of the fruit in France are shaken from the trees, dried with less care, and roughly packed in casks. Of this character are the prunes which come from Servia and from Turkey. Bosnia prunes are the best that come from Turkey. Austrian prunes are of an inferior quality, but some good prunes are obtained from certain sections of Hungary. Prunelles are a peculiar kind of prunes, with the stones removed. They are of an acid flavor, and not so popular as the ordinary article. Ordinary dried prunes of the lower grades have to be stewed before they are fit for the table. New York is the great point of import for foreign prunes. In regard to the prices prevailing and the demand from year to year, they may be said to be contingent upon the cost and supply of the fruit. When prunes can be sold at twelve cents a pound the trade in them is very much larger than when the price is higher. The fresh crop arrives in December.

PULSE. Name for the edible seeds of plants which bear pods.

PULVERIZE. To reduce any granular article, such as sugar, to an impalpable powder.

PUMPKINS grow to a very large size and in great varieties of colors; are much used in making pies. Pumpkin meal is made by drying and pounding. It is allied to the gourd family and is often used in soups. If cut into strips and dried in the sun it will keep all the year.

QUINCE. The quince is very closely allied to the peach family. It has a rich yellow orange color with a strong odor, is a hard fruit seldom eaten raw but when stewed with sugar is very agreeable and is used either by itself or to flavor apples. It is also used for making a preserve which is erroneously termed marmalade (which see) A very delicious drink is made from it resembling cider. Gum is also extracted from it. It is very generally cultivated in this country. Among the best varieties are the Orange and Portugal. Quinces are in season from October to December.

QUINTAL—a weight which varies in different countries, generally about 100 lbs.

RABBITS are plentiful both in the wild and domestic state. They are tender when under one year old. Their age can be detected by their paws and ears which should be very soft if they are young. Domestic rabbits should not be eaten unless they have had wide range, free from manure and plenty of opportunity to burrow in dry soil.

RACAHOUT DES ARABES. An Arabian substitute for chocolate; is a preparation of roasted acorns ground and mixed with sugar and aromatics.

RADISH (The) is cultivated in an endless variety, varying in size from a chestnut to a man's head. They are grown in some countries all the year round. Their season commences in April.

RAISINS are made from grapes, and prepared in two ways by drying. One method is to partly cut through the stalk and allow them to dry on the vine in the sun. These are by far the best sort, and all Muscatels or Malaga raisins are so treated. The other mode consists of drying them after they are taken from the vine, either in the sun, or in ovens, and sometimes dipping them

in a solution of alkali made out of wood ashes and water. After this dipping, the fruit is laid on benches to drain and exposed to the sun for two weeks, when they are removed from the stalks and packed for export. There are really four different kinds in the market varying widely in quality. Muscatels are a large, black fruit, and, when of fine quality, possess a rich purple bloom. Valencias, another Spanish variety, are best when of a dry, bright yellow appearance and free from all but the very small stalk. Sultanas or seedless raisins come from Asiatic Turkey and are finest when of a pale yellow, transparent color. Smyrna raisins are similar in appearance to Valencias, but are considered the lowest class on the market, the fruit being usually small and very stalky. A very agreeable wine is made from raisins. They are packed in casks, frails, and boxes. The whole box should contain 25 pounds, and the half and quarter boxes should be proportionate parts of the same; but as gross deception in weight had crept into the trade, a general protest was made against the abuse and in a great measure it has been rectified. Dealers should insist on having full net weights, if they purchase on that understanding.

RAPE SEED, or Kale seed, when handled by grocers, is used as food for birds. It is largely cultivated for the manufacture of oil for lubricating machinery, the refuse, after the oil is extracted, being pressed into rape cake, which is used to feed cattle, for which the stalks are also utilized.

RASPBERRY (*The*) grows wild, but the cultivated species are generally sold in our markets. The fruit is used for a dessert, jams, jellies, and for making flavoring of various kinds, and mixed with brandy, wine, or vinegar for the preparation of raspberry syrup, raspberry vinegar, etc. Raspberries, fermented either alone or with currants or cherries, make an agreeable wine. Blackberries are of the same species as raspberries. Seasonable from June 15th to August 15th. The delicate flavor of these berries is entirely lost after holding them a few days.

RASPBERRY VINEGAR is a preparation made from

raspberry juice, vinegar and sugar. It is best made by putting carefully-gathered, very ripe raspberries into jars, and when full of fruit, fill the space up with vinegar, let stand for eight or ten days, when the liquid is poured off carefully. This process is sometimes repeated three times. The liquid is then gently boiled for five minutes with its own weight of refined sugar and then tightly corked in bottles. Added to water it makes a refreshing summer drink.

RATS. A most destructive pest, and one which should be vigorously exterminated. If a grocer finds his store overrun with these vermin, he should get rid of them at once, their destructiveness to property being astounding. A good cat is the best remedy. If poisons are used, and any of them die about the premises, chloride of lime or other disinfectants will neutralize the odor.

REAM. A quantity of paper which should contain 480 sheets of any size, but seldom running full count, especially in grocers' straw wrappers, which average less than 450 sheets to the ream. Count your paper and get what you pay for, but bear in mind that if a ream containing 450 sheets is really worth 45 cents, it will be necessary to pay 48 cents for full count.

RENNET is prepared from the stomach of a young calf, by soaking it in salt water for several weeks, or often for a year. It is used to coagulate milk, and in the manufacture of cheese. It should be delicately prepared, and is sold generally to a nice class of customers. It comes in small bottles about the size ordinarily used for extracts.

REVALENTA ARABICA. The farina made from the interior of the lentil, which is used as food for infants and invalids.

RHUBARB, or Pie Plant, is a very valuable plant, and as cultivated in the gardens, furnishes many varied dishes for the household. From it a desirable wine is made. The thick end of the leaf-stalks alone are used, the leaves being very unwholesome. If these stalks are dried in the sun they may be kept a long time, and, if soaked in water over night, will be found almost as good as fresh ones. It is in season from April to September. The rhubarb

sold by chemists and used extensively as a medicine, is a root grown principally in China or Chinese Tartary.

RICE is the seed or grain of one of the grasses and quite common in the warm countries. It was first introduced into this country in 1694, from Madagascar, by the captain of a vessel, who presented a bag of paddy (which see) to one of the merchants of Charleston, and from this seed originated a crop which now amounts to many millions of dollars annually. Rice is not only the most useful, but also the most extensively cultivated of grains, as it supplies the principal food of one-third of the entire population of the world.

Patna rice, of small, pearl-white grains, is the most esteemed of Eastern products, but the Carolina rice is universally regarded as the finest in size and quality. That coming from the East is usually shipped in its hulls, while that from the Southern States is always decorticated or cleaned. It grows best on lands that can be flooded, and on the islands of the coast the fields are usually dyked in and regularly flooded at high tide, so that the water is retained on them after the ebb. Two crops can be secured in one year, and the total product of rice is estimated at six times that of wheat. Its use in the more northern countries in place of potatoes, which are generally more expensive and always more uncertain in quality, is much restricted by the general ignorance of how to cook it. Grocers in the Northern States who handle rice mainly as a luxury, and sell a few pounds to go in soups and puddings, have no idea of its wide sale in the South, where moderate stores will have four tierces of it open at once, close to the doorway and labeled with price cards, each tierce being a different grade, as, fancy, whole, middling, and small. The grades depending almost entirely on the damage done to the grain in hulling it, there is no limit to the grades which can be reckoned from fancy head rice down to the finely-powdered article.

ROASTING. See *Coffee*.

ROOT BEER EXTRACT is put up in convenient packages which country dealers will find very saleable. Each package

makes about five gallons of the beer, and many dealers find it profitable even to bottle it.

ROPE. A general name for all kinds of cordage formed by twisting together a collection of vegetable or animal fibres, or metallic wires. The term is more correctly applied to cordage which is above an inch in circumference, the smaller sorts being designated by the names of twines, cords and lines. The invention of ropes or cordage is of very ancient date; indeed, the art of twisting the hairs of animals, tough grasses and vegetable fibres existed among the rudest people. There are several varieties of rope, including Manilla, Sizal, cotton, hemp, and cordage made of different kinds of grasses. The coir-ropes of Ceylon and the Maldivé Islands are made from the fibrous husks of the cocoanut, the Manilla rope from the fibres of a species of the wild banana. There are other vegetables which have fibres of great tenacity, but the *cannabis sativa* or cultivated hemp, and the *linus usitatissimum* or flax are preferred, the fibres of both possessing the necessary qualities of flexibility and tenacity in a remarkable degree. The fibres of the hemp are first twisted together to form a thread or yarn, and these yarns are then combined by twisting them into a strand, and three strands are combined in like manner, and form what is properly known as a rope. The fibres should be so arranged that each in the finished rope shall offer the greatest resistance to its being torn asunder in the direction of its length. There are, of course, further operations connected with the manufacture of rope, such as forming the strands into hawser-laid ropes, and these again into cable-laid ropes. It is easy, however, to recognize the fact that, considering the many uses to which ropes are applied, the possibility of having specific rules for their manufacture is entirely precluded. Some require greater flexibility; others, again, impenetrability to water; in some, strength is of primary importance, but a standing rule regulates all the various manufacturing processes—never to make use of so much twist as will impair the strength of the fibre. Soaking in hot tar will prevent the decay of the rope, but the ap-

plication of tar will oftentimes reduce its strength, especially in hot climates. Duhamel says that untarred cordage in constant use is one-third more durable than when tarred; it retains its strength when kept in store, and resists the ordinary influence of the weather one-fourth longer than when tarred. In the manufacture of rope, flax fibres are used for small lines and cords only, and hemp for all kinds of cords, from the smallest to the largest.

APPROXIMATE WEIGHT AND STRENGTH OF CORDAGE.

Circumference in inches.	Diameter in inches.	Weight of 100 fath. in lbs.	Weight of 100 fath. tarred in lbs.	Strength of new ropes in lbs.	In 4 lbs. in feet.
6 thread	$\frac{1}{4}$	14	17	450	43.
9 "	$\frac{5}{16}$	20	24	750	33.
12 "	$\frac{3}{8}$	28	34	900	21.
15 "	$\frac{7}{16}$	34	41	1,250	17.
18 "	$\frac{1}{2}$	45	56	1,700	13.
$1\frac{3}{4}$	$\frac{9}{16}$	61	78	2,250	10.
2	$\frac{5}{8}$	80	100	3,000	7.
$2\frac{1}{4}$	$\frac{3}{4}$	101	126	3,900	6.
$2\frac{1}{2}$	$\frac{13}{16}$	125	156	4,700	5.
$2\frac{3}{4}$	$\frac{7}{8}$	151	189	5,600	4.
3	1	180	225	6,750	3.4
$3\frac{1}{4}$	1 $\frac{1}{16}$	211	264	7,850	2.9
$3\frac{1}{2}$	$1\frac{1}{8}$	245	306	9,150	2.4
$3\frac{3}{4}$	$1\frac{1}{4}$	281	351	10,600	2.1
4	1 $\frac{5}{16}$	325	400	11,950	1.10
$4\frac{1}{4}$	$1\frac{3}{8}$	361	451	13,450	1.7
$4\frac{1}{2}$	$1\frac{1}{2}$	405	506	15,150	1.5
$4\frac{3}{4}$	1 $\frac{9}{16}$	451	564	16,700	1.4
5	$1\frac{5}{8}$	500	625	18,700	1.2
$5\frac{1}{2}$	$1\frac{3}{4}$	605	756	22,600	1.
6	2	720	900	26,900	.10
$6\frac{1}{2}$	$2\frac{1}{2}$	845	1,056	31,500	.8 $\frac{1}{2}$
7	$2\frac{1}{4}$	885	1,125	36,600	.7 $\frac{1}{2}$
$7\frac{1}{2}$	$2\frac{1}{4}$	1,125	1,406	42,000	.6 $\frac{1}{4}$
8	$2\frac{5}{8}$	1,280	1,600	47,800	.5 $\frac{1}{2}$
$8\frac{1}{2}$	$2\frac{7}{8}$	1,445	1,806	54,000	.5
9	3	1,620	2,025	60,500	.4 $\frac{1}{2}$
$9\frac{1}{2}$	$3\frac{1}{8}$	1,805	2,256	67,300	.4
10	$3\frac{3}{8}$	2,000	2,500	74,800	.3 $\frac{1}{2}$

A fathom equals six feet.

ROQUEFORT CHEESE is made from the milk of sheep and goats, and is a very popular cheese among epicures. The care and skill required in its manufacture is very remarkable. The great herd of sheep at the village of Roquefort, in France, is pastured on an immense plain of the richest herbage. Their yield of milk is stimulated in every possible way, even by beating their udders with the hand as soon as the milking is done. They are fed on prepared foods and the water they drink is whitened with barley flour. There are many thousands of these sheep, and the milking hour (morning and evening), when the many maidens with their pails are seen hurrying over the fields, each one in search of some favorite animal, is truly a very picturesque and interesting scene. These pails of milk are taken to the farmhouse, skimmed, strained, and warmed almost to the boiling-point, and then emptied into enormously large pans and left to gather into curds. The morning and evening milk are thrown together and then well-stirred with willow sticks. A portion of rennet is added and then the covers are placed over and it is left to gather the cream. It passes through a half-dozen operations before the mouldy-bread process has its turn, and the mouldy bread is as carefully prepared as the cheese itself. The bread is made from the finest of wheat or of winter barley, with a large quantity of brewers' yeast, is kneaded to excess and thoroughly baked. After standing a day the crust is removed and then pounded in a mortar, and finally it is put away in a damp place until every crumb is covered with mould, and then the new cheeses are rubbed with it until every part has become incorporated with the mouldy bread, and this forms the peculiarity of the Roquefort cheese. Indeed, layers of this bread are usually put between the layers of curd, so that they may supply it liberally with green mould. After pressing the curd for several days, the cheese is wrapped in linen and dried, after which they are taken by the shepherd dairy-men to the village and sold to the owners of the vaults which are made in the limestone caves in the rocks hard-by the town. In these caves they are piled up and salted, and frequently rehandled

and rubbed so that the salt will penetrate them, after which they are scraped and pricked with long needles, so that the mould may run entirely through them, and they are again piled up until perfectly dry and covered with long white mould. Very few people who know the cheese well are aware of the care that is taken to please their palates.

RUM. A spirit made by fermenting and distilling the sweets that accrue in making sugar. It is also made from skimmings of scum from the hot molasses, but is then of inferior quality. When first distilled it is white, but is usually colored with burnt sugar or caramel. The quality of rum is much improved by age, and as much as sixteen dollars has been paid for an imperial pint bottle of old rum. It is imported from all sugar-growing countries, but in the East is called arrack, and differs from the West India article. That from Jamaica and Santa Cruz has a better repute than that of Guiana and the Leeward Islands. Its adulteration and its strong odor have checked its use in this country of late years in comparison with other liquors. The term "pineapple" rum is derived from a custom in some West India Islands to put sliced pineapples in the casks to flavor the rum.

RUST consumes faster than labor wears. Keep all goods which are exposed to the attacks of rust dry and perfectly clean, whether for sale or not, and your banking balances will receive the benefit of any attention you may bestow upon the balances on your counter. Oil, being a preventive, should be frequently used on articles which are liable to rust. Articles already rusted can be cleaned with emery and oil; if badly coated, they should be soaked in oil for several days before attempting to polish them.

RUSSET (see *Apple*). A kind of reddish-brown apple, ripening in the fall.

RYE. A species of grain, the produce of *Secate Cereale*, much resembling wheat, and may be considered next to it in quality, not being so nutritious. It is very hardy, and of all the grains brought directly under cultivation, it has been the least altered, being but little better now than when found in its wild state. The

American Miller says rye flour does not yield a fine, light loaf like the ground product of wheat. The bread is heavy, owing to a peculiarity of the gluten, and also, in all probability, to the defective manner of its manufacture. Rye bread is almost the staple article of food in Russia, where annually are produced more bushels of rye than bushels of wheat are produced in the United States. The consumption of rye flour in the United States is by no means large, but it is gradually increasing among Americans, although it still finds its principal consumption among the foreign population of our land. Rye bread has an aromatic taste independent of the flavors which are usually imparted to it in baking, and also, occasionally has stimulating properties, owing to the presence of ergot or smutted rye. The enormous increase of immigration from rye-consuming countries to the United States will no doubt increase the production of rye and the consumption of rye flour in this country, particularly in the Northern States. This possibility suggests the fact that we have no adequate means of making rye flour compared with the mills of European countries. There are only a very few mills in the country who make a specialty of the manufacture of rye flour, and in these great improvement is no doubt possible.

SACK. A bag, made generally of coarse, heavy material. Flour requiring a finer texture is said to be "bagged." Salt bags and other articles admitting of coarser goods, are called sacks. Sacks of salt vary in contents with each brand. The term is said to be common to all the languages of Europe, and even to some of the Asiatic tongues.

SAGE is a plant quite generally used in cooking, on account of its peculiar aromatic smell and astringent taste. It contains an essential oil. The leaves are dried and sold in packages for flavoring soups, preparing sauces, stuffing fowls, etc.

SAGE CHEESE, sometimes termed green cheese (see Cheese), is made by cutting up very fine a quantity of sage and mixing it with the curds.

SAGO is the starch found in several varieties of palms. It is

obtained from the farinaceous pith within the bark. The pith is taken out and bruised in a mortar, placed in a cloth or strainer, and then held over a trough, water being poured upon it, which washes out the starch or sago. The water is then drawn off and the sago dried by evaporation, after which it is granulated by passing it through a colander and rubbing it into little pellets. Its nutritive value is less than that of other farinaceous foods, as it is almost pure starch. The best sago is of a slightly reddish hue and readily dissolves in hot water, but is also soluble in cold water.

SALADS. Lettuce, endive, or other herbs, eaten raw and dressed with vinegar, oil and other condiments. These should be made staple dishes in summer, but unfortunately we have too few materials for salads. The lettuce is generally considered to be the only thing needed, when it is far more refreshing to take in several other green vegetables of the kind. Cresses of all kinds should be used, together with the lettuce; also parsley of several kinds, beetroot slices, mint chopped fine, young onion tops chopped very fine, capers, dandelions, and various other greens that are aromatic and can be used beneficially mixed with oil and vinegar, flavored with salt and pepper. Meats, when used in salads, such as lobster, crab, flesh, or fowl, should not be minced, but picked or cut in pieces the size of dice, or even larger. Nothing in the line of foods is more delicate than salads, and the best materials are absolutely necessary. Their use is steadily increasing, and if a grocer desires to make free sales of olive oil, mustard, and fine vinegar, he must keep choice grades of these articles, especially during the salad season. If rancid butter was as common a commodity as rancid oil, most people would put up with dry bread altogether.

SALAD DRESSING is a preparation for dressing salad conveniently, put up in bottles and sold by grocers to families ready for use. Those most appreciated are made by Annear of Philadelphia, Curtice of Rochester, and Durkee of New York.

SALERATUS. See *Soda*.

SALSIFY. See *Oyster Plant*.

SALMON, considered among the most delicious of all our fish, is sold fresh, but is not thought to be good after it has left the water twelve hours. It is mostly dealt in by the trade as canned goods, being the most extensively packed of all fish. There are innumerable brands of salmon, many of the old and noted ones commanding high prices, but some of the less known brands packed by younger houses are sold cheaper and often are equal in quality to those sold at a higher figure. Salmon are also dried and smoked, that, in former years, being the only shape in which it entered our interior markets; it is also canned in spices.

Of many of the habits of the salmon we are still ignorant, but we know they spawn in fresh water and then go down into the salt. Professor Jourdan says that in April, when the Columbia is high, they appear to be attracted from the ocean, probably by the cooler water of the river. They turn into the river, and as soon as they feel the influence of the current they go right up. Near the mouth of the river, and where the water is the least discolored, they can only be taken by the seine. They take the hook in salt water or in perfectly clear fresh water. Up the Columbia the salmon journey, and are found away up in Montana, and following the Snake and its tributaries, they penetrate into British Columbia. The salmon will come up stream as long as water can be found deep enough in which to swim. At the head waters of the river they often present a pitiable sight. They are frequently found with their heads smashed from contact with the rocks, their eyes knocked out, their fins scraggy, and otherwise bruised and injured. Here, after spawning, as they can go no further, unable to obtain food, they die in large numbers, and very few of them which penetrate thus far ever reach the ocean again. The last month or so that they are running up the Columbia they are unfit to eat, being poor in flesh, often covered with blotches and sores, and generally in a poor condition. There are about 1,500,000 salmon taken annually in the Columbia River, amounting to about 30,000,000 pounds in weight. It has been feared by some

of the large canners on the Columbia that the supply might be diminished from the large number annually taken, but probably enough escape the nets and spawn to keep up the supply. The principal salmon used for canning on the Columbia is the Chinook or spring salmon.

The salmon canned on the Pacific Coast weigh from ten to thirty pounds, and are packed in canneries at the river's edge. After cleaning and washing them, they are cut by machinery into strips just as wide as the depths of the cans. These strips are put in the cans in just proportion of meat from the back and from the belly of the fish, and the whole is then processed in the most careful manner in the cans, the reputation which the Pacific salmon enjoys all over the world being largely due to the precautions which are taken to have every can perfectly air-tight, thoroughly filled and cooked, and free from imperfections.

SAL SODA. See *Soda*.

SALT. Common salt is produced from rock salt, or from natural brine from wells or springs, or by the evaporation of seawater. It is put up for the market in various ways, the most convenient for handling being bags of three pound size.

A writer in the *New England Grocer* says: "Soon after the foundation of Rome the salt works of Ostia were established at the mouth of the Tiber; the price demanded for salt was so extortionately high that nearly a century later the right of vending was transferred to the Roman government, and private individuals were forbidden to engage in its preparation. The revenue derived from this source was very great and contributed materially to the support of Rome. Venice, in more recent times, was noted for her salt works, to which was ascribed much of her maritime power. In the Bible, salt is frequently spoken of, and the expression, "Ye are the salt of the earth," is familiar to all readers.

Modern scientists give as one argument that salt is not a prime necessity as a condiment or an antiseptic, that it was little, if at all, used by the North American Indians previous to their acquaintance with the Europeans and their method of living. It is

said that they used in its place the ashes of hickory. The native Peruvians obtained their salt from salt springs near the ancient city of Cuzco, and the Florida natives from the Arkansas River. De Soto's historians allude to salt mounds in their accounts of his famous expedition, and the New York Indians procured salt at Onondaga long before the settlers commenced its manufacture.

The exclusive right to manufacture salt in Massachusetts was given to Samuel Winslow in 1641. Despite this grant, salt works were set up all along our coast, the great demand for the article being to supply the fisheries then beginning to assume considerable magnitude. The Plymouth Colony, as an auxiliary to the fisheries, commenced the first manufacture of salt in the northern colonies, but shortly after the same business was inaugurated at the site of the present city of Portsmouth, N. H. The Virginians had commenced the manufacture as early as 1620. Thus it would seem that this was one of the very first industries of the colonial settlers. In 1633, Massachusetts colony was compelled to import salt from Virginia.

Common salt is simply chloride of sodium, being a compound of one atom of chlorine and one atom of sodium. It is very seldom found in a pure state, the principal impurities being sulphate of lime, clay, and oxide of iron. It is found native in the earth, or it is produced by evaporation and crystallization from water impregnated with saline properties. In sea salt the impurities are salts of magnesia and sulphate of lime. The purest rock salt is considered the best of all, the sea salt next, and then that obtained from saline springs. The water of the ocean is said to contain 33.8 parts of salt in 1,000, or about 4 ounces per gallon. A bushel, therefore, could be obtained from 325 gallons. The Mediterranean sea contains more salt than the ocean, while the Dead sea is famous for its large proportion of salt, the water being so dense as to render it impossible for a person to sink in its depths.

Our climate is favorable to the manufacture of salt by evaporation, and since 1629, when the Cape Cod fishermen obtained their supply in this way, it has been a great source of our supply. At

one time, upon Long Island, salt was made by exposing sea water, in shallow vats, to the action of sun and wind; this was known as the solar method. We use salt obtained from sea or spring water for culinary purposes, but in Holland they consider that it must be re purified and re-crystallized before it is fit for use. It is now the almost universal practice in this country and Great Britain to evaporate the brine by boiling. The old windmills on Cape Cod still stand, and remind us of the days when they pumped water from the ocean into wooden vats where salt was made.

From statistics published, it seems the annual product of salt in this country aggregates 20,000,000 bushels. The States where it is principally produced are West Virginia first, New York second, and Michigan third. The capital invested in this manufacture in America is computed to amount to \$7,000,000, over 3,000 hands being employed in the 23 States and Territories that produce salt. It may be news to our readers to learn, as stated by the *American Cultivator*, that the famous Onondaga salines in New York State, situated in the towns of Syracuse, Salina and Geddes, belong to the State, which supplies the brine to manufacture and receives a royalty of one cent a bushel. They have been worked since 1790, but were discovered in 1654, by French Jesuits, who were prosecuting their perilous missions in the country of the Onondagas and the Iroquois. Father Lallemont is believed to have been the first to mention them. In 1862 the production reached a maximum of 9,053,874 bushels; since that year the average has been about 8,000,000 bushels. The productive springs are, in a great part, found in the marshy lands which surround Onondaga Lake. Wells are sunk or bored in the low lands around the lake, from 200 to 300 feet, and from these the salt water is forced up by pumps into the reservoir, from which the evaporating works are supplied. The brine is of variable strength in the wells, and from 30 to 45 gallons are required for a bushel of dry salt weighing 56 pounds. The salines in the valley of the Great Kanawha, in West Virginia, are also very important, yielding about half as much as the Onondaga salines. The brines of the Onondaga wells

contain about one-half of one per cent. of sulphate of lime, a very small percentage of the chloride of calcium and magnesium, mere traces of carbonic acid and oxide of iron, and from 16 to 17 per cent. of salt.

Notwithstanding this large home manufacture of salt, we import one-half the amount consumed by our people annually. Salt has sold away up to \$12 per bushel, and could we not import sufficient to supply the deficiency in our home production, great distress would prevail. Salt is widely distributed over the globe, the principal rock salt mines, however, being those of Wieliezka, in Galica, at Hall, on the Tyrol, and along the mountain ranges of Austria. In England it is found in the region of Cheshire, and in Russia in the Government of Perm. The noted salt springs are in Cheshire, Staffordshire, and Worcestershire, England, which country, by the way, manufactures more salt than any other. The salt known commercially as Liverpool salt, is obtained from wells 200 to 250 feet in depth in Cheshire. 5,000,000 tons are now produced annually in Europe. In China there are remarkable salt wells, and the West India Islands produce much salt. Turk's Island was at one time our main supply, and considerable salt coming from other islands is now called by that name. In 1879 we exported salt valued at \$20,089 against \$16,275 in 1878. Our imports are probably in the vicinity of 20,000,000 bushels.

We annually consume 40,000,000 bushels, and the consumption is increasing rather than diminishing. One reason for this is its increased use in the export provision business. For this purpose Turk's Island salt is regarded as the best. The import duty on salt is three cents per bushel in bulk, or when not in bulk, twelve cents per 100 pounds. It costs but six cents per bushel to manufacture Onondaga salt. Salt manufactured in the United States is much better than that made in Spain or the Azores, which has a sharpness of taste not at all agreeable. The kinds of salt sold in this market are Ashton's Liverpool fine, Higgins' Phoenix, Deakins', Washington's, Enon's, Marshall's and Worthington's, all fine, and Liverpool ground, besides the coarse kinds, in rock

and otherwise, from Turk's Island, the Mediterranean, Bonair, Inagua, Curacao, Lisbon and Cadiz.

Salt has always been the synonym for wit and piquancy, hence the term "Attic salt." Shakespeare says: "Though we are justices, and doctors, and churchmen, we have some salt of our youth in us." It was formerly considered a very unlucky omen to upset the salt-cellar at the table, and to sit at the table "above the salt" was a position of honor, the old custom being to place a salt-cellar in the middle of the table, the places above which were assigned to the guests of distinction, while those "below the salt" were dependents and servants. Hence, the expression of Ben Jonson, with which we close this rough sketch: "His fashion is not to take knowledge of him that is beneath him in clothes. He never drinks below the salt."

SALTPETRE is, strictly speaking, nitrate of potash. It forms the principal ingredient in gunpowder, and, possessing considerable antiseptic power, is used in preserving meats, to which it imparts a bright red color. The rancidity of butter may be corrected by working it over with saltpetre. It is now largely imported from Peru, whose nitrate deposits are almost inexhaustible in quantity.

SAMPLES of merchandise, seeds, cuttings, bulbs, roots, etc., if mailed in such a way that the contents can be easily determined and which in its form or nature is not liable to destroy, deface, or otherwise damage the contents of the mail-bag, can be mailed at the rate of one cent for each ounce or fractional part thereof. Flour must be put in a tin box, and a pliable metallic package has been invented, which is now generally used for the mailing of soaps and other articles of like nature. Liquids, poisons, explosive and inflammable articles, fatty substances easily liquefiable, live or dead animals (not stuffed), insects (except queen bees when safely secured), and reptiles, fruits or vegetable matter, confectionery, pastes or confections, and substances exhaling a bad odor, are unmailable.

SAMP. A term sometimes used for hominy, especially the large-grained article, or half-kernel and whole-kernel samp.

SANDWICH MEATS are specially prepared for spreading between slices of bread to make sandwiches, and are generally composed of the cuttings of ham and tongue made in canning them, which are afterwards minced up and canned separately.

SAPOLIO. A compound used for washing and scrubbing, made by the Enoch Morgan's Sons' Company of New York, is a soap in which the finest silica is incorporated, and enjoys such an enviable reputation that many imitators have appeared, the suit between its manufacturers and the Thurbers (who packed their "Pride of the Kitchen" in such a way as to closely resemble Sapolio) being one of the most important cases.

SAP SAGO. A small cheese of dark green color and agreeable flavor, made in Germany and Switzerland. It is flavored with melilot leaves, which give it a green color, and should be grated for table use.

SAPONIFIER. A brand of lye packed by the Pennsylvania Salt Manufacturing Company. It comes in one pound tin cans, and is used for soap-making, for softening water, and cleansing generally.

SARDINES. The sardine fishery is an industry which has long played a conspicuous part in the prosperity of the coast population of France. Though of less importance than it once was, it still gives employment to not less than 2,500 boats of seven or eight tons each, manned by about 30,000 people, while the preservation of the fish affords work for at least an equal number of the population. The seat of the industry is in the department of Finisterre, on the coast of Brittany. The boats are twenty to twenty-five feet long, of great breadth, flat in the stern, but raised and pointed at the prow, which gives them great speed. The fish are caught in nets made of very fine cord, with meshes of such size that the sardine is caught by the gills. The upper part is floated with corks, which serve to maintain the vertical position of the net. In the sardine fishery, the bait, which is called the *rogue*, plays the principal part. It is a kind of caviare, made from the eggs of the cod preserved in brine, 35,000 barrels of

which, representing a value of \$350,000, are annually imported from Norway. If the bait causes the sardines to rise, a few emerald green flashes appear in the waves, when the fishermen do not spare the bait, and presently the whole shoal rises around the nets. When there are no more fish to be taken, the nets are hauled in, the sardines taken out, and the boats make for shore. On landing, the sardines are taken from the boats to the factories and the preparations begin at once. Women cut off the heads, open and clean the fish, and place them, one by one, on stone or marble slabs previously strewed with salt. While this preliminary drying takes place, the fires are lighted and the oil is put in immense cauldrons. When the oil is in a state of ebullition, the sardines are laid in layers in iron wire baskets provided with handles. These baskets are plunged into the boiling oil, and then placed on shelves covered with sheet zinc to drain, the oil being caught for future use. The fish, when moderately dry, are taken to the large drying-house, exposed to the sea breeze, where they remain for a longer or shorter period, according to the state of the atmosphere. On leaving it, they are sorted and put into boxes. The best fish are those which are put in quarter boxes, each containing eight to twelve fish. The smallest fish are often metamorphosed into anchovies. Large quantities of these toothsome fish are shipped to the United States, but they are not now so generally used as they were formerly in this country. This is due to a variety of causes. In the first place, the quality of the fish has sadly degenerated, through the substitution of cotton-seed and groundnut oil for pure olive oil in packing the fish. In the second place, a variety of canned fish, salmon, oysters, meats, poultry, etc., of home production, now figure more or less extensively as relishes upon the American lunch and dinner table. As a consequence of this innovation, sardines are much cheaper than they were in former times.

The true sardine, says H. C. Hovey, is a fish found near Sardinia, in the Mediterranean Sea. But the same fish swims in other waters, and although its qualities may be slightly changed

by its surroundings, naturalists recognize no difference. As a matter of fact, most of the sardines in market were caught along the coast of Portugal and Brittany, the principal place of export being Bordeaux. Crossing the Channel to Devonshire and Cornwall, we find the very same fish under the name of pilchard, and it is stated by an English authority, that, on an average, 30,000 hogsheads are annually exported, and chiefly to points along the Mediterranean. And, as 2,500 of these little fish are reckoned to a hogshead, it makes the average annual catch of pilchards 75,000,000.

The widespread family of the *Clupidae*, to which the sardine belongs, includes many allied species, most of which are valued as food fishes, while some of them are highly prized by epicures. What are known as "Spanish sardines" are the *Harengula* of the West Indies and the *Pellosa* of South America. Whatever may have been originally meant by "Russian sardines," the name is now applied to spiced herrings, and the majority used in this country are caught in our own waters, sent in bulk to New York, Chicago, Minneapolis, or points still further West, where dealers who wish to create the impression that they are imported, put them up in small kegs with willow hoops and foreign labels.

The term "American sardines" was first applied to a preparation of the smaller menhaden or whitefish, a fish mainly valued for its rich yield of oil and its merits as a fertilizer. By steaming its bones were softened, and, when packed in olive oil, it was offered as a substitute for the sardine. Those that were too large to pass under that name were called "shadines." Glowing accounts of the new business appeared in the New York papers; the goods received a medal of merit in 1873 in Vienna, and a silver one the next year at Bremen, and it is claimed that in a single year 30,000 dozen cans were packed and sold. But, for some reason, the popularity of menhaden sardines suddenly waned, and the business has now practically gone out of existence. About 2,000 cases of American sardines were put up by the Eagle Company during the first year at Eastport, Me., but they were dis-

posed of at a loss because of the large expense involved, and the suspicions awakened by newspaper attacks. Only the smallest-sized herrings could be used for the purpose, and in order to make use of the larger ones, the so-called "sardine marinee" and the "mustard sardines," packed in larger boxes, in spices and mustard, were adopted. The demand rapidly increased, and also the opposition to the enterprise. The entire packing by all firms, for 1880, was estimated at about 70,000 cases, while the total number reported as imported from Bordeaux, Port Louis, Nantes, Lorient, etc., did not for that year exceed 100,000. The number of factories has been nearly doubled since last year, there being now fifteen at Eastport, three at Dubec, three at Jonesport, and four at other places in Maine. Many retail dealers in New York and other cities, regard the American sardines with suspicion and even positive disfavor. But while the Eastport sardines are inferior to the best imported goods, they excel the less choice brands, and there is unquestionably a place for them in the American market. The impression prevails, and has some foundation in fact, that, instead of using, as is claimed, "pure olive oil," the article used is largely adulterated with cotton-seed oil and other cheap oils, a trick that has also, it is said, been learned in canning French sardines. But if they would do their best, conscientiously using pure materials, as well as availing themselves of all the latest improvements, they could not only meet with large sales, which they now do, but the market for French sardines would soon become quite limited in this country. But if that desirable day were not still in the future, the can factories of Eastport would not employ their expert tinsmiths in cutting cans from sheets ready stamped with foreign labels, but would have pride in bronzing the company's name on every can, in good, honest English.

And while to the skeptical consumer it may seem incredible that a fish hitherto seen chiefly in the coarse form of smoked herring and bloaters could by any process be made to rival the delicious sardine from the land of olives, he should remember that the renowned "whitebait," a dish for British lords, is but the

young of the English herring, which is said by the United States Fish Commission to be identical with the herring caught along the coast of northern New England. If American sardines are not now equal in all respects to those that are imported, it is due to causes that can and should be removed, and those who have exhibited such enterprise and skill in their manufacture deserve to be encouraged to carry on to perfection the work they have begun.

SAUCES are preparations of various meats, vegetables and condiments, each manufacturer having his own recipe, from which he makes an article of more or less popularity. They have been in use since the time of the ancient Romans, for culinary purposes. Many of them are based on wine, but vinegar is the most common ingredient. For many years English sauces have held the American market, but the domestic article is now fast gaining ground, and justly so, as American manufacturers are producing sauces which cannot be surpassed.

SAUERKRAUT. A German preparation of pickled cabbage. Close heads of white cabbage are cut into fine shreds, placed in layers in a tub, with salt, pepper, and other spices, and allowed to ferment after considerable pressing and pounding. Then strong brine is poured over it and it is packed away for use. It is eaten in various ways, generally boiled or fried with meats. Previous to cooking it is partly washed from the salt.

SAUSAGE. A minced meat, generally pork, finely chopped up and mixed with seasoning ingredients. Machines for making them conveniently are now sold very cheaply and nervous house-keepers can readily make their own sausage meat.

SCALES. Of all things appertaining to the fixtures of a grocery store, the greatest care should be used in obtaining the very best balance possible. An extra dollar spent on a good scale will repay itself one hundred per cent. the first year. Care should always be taken not to strain scales by weighing too heavy goods on small ones unfitted for such use.

SCHWEITZER. See Cheese.

SCOOPS. It is always well to buy nothing but good, strong

scoops which will last and prove satisfactory in the using. Steel scoops and three-ply wooden scoops are among the best.

SCRAPPLE. A Pennsylvania dish, originating among the Germans. It is made as follows: A young pig's head is boiled until the meat is readily separated from the bones. This is then minced up very fine and put back into the soup, which is afterward thickened with buckwheat and Indian meal and seasoned with spices and herbs. It is then of the consistency of mush, and is run into pans to cool, when it is sliced and fried for the table.

SEALING WAX. Composed of shell-lac, resin and Venetian turpentine, originally used for sealing public documents, but now in demand for sealing fruit jars. The use of rubber rings and various similar devices has, however, taken the place of sealing wax for such uses.

SEA MOSS, or Iceland Moss, is a lichen found in all the northern parts of the world and widely known for its nutritious and medicinal properties. It usually grows near the sea, but in some southern countries it is found on mountains. It is sometimes pounded and made into bread, or boiled with water (the first water, which extracts its bitterness, being thrown away), and often boiled with milk, making a very desirable jelly. It is sometimes combined in manufacture with cocoa, is very nutritious, and is specially suitable for invalids for whose use it is often made up into puddings and jellies, or blanc-mange.



SEEDS. All grocers should handle seeds, as they are profitable and of ready sale. Care should be taken not to lay in too heavy supplies, but, commencing with the more saleable varieties in small quantities, build up a regular demand. D. Landreth & Sons, of Philadelphia, are glad to encourage such trade and supply reliable seeds, which should not be exposed to the air which exerts a deleterious effect upon them and will eventually destroy their vitality.

SELF-MEASURING FAUCETS. A patent faucet is

manufactured by the Enterprise Manufacturing Company, of Philadelphia, with which the stiffest molasses can be drawn in cold weather, and which measures the liquid as it passes through. The sealers of weights and measures cannot collect on it otherwise than as a gill measure, which is the largest quantity that the faucet holds at one time.

SEMOLINA. In France the name semolina is given to small grains of wheat remaining in the bolting machine after the finer parts have been passed through its meshes. The best semolina is obtained from the south of Europe (see Macaroni). Hard, dry wheat produces a considerable quantity of semolina, which is very nutritious, and is used, like rice, in soups and puddings.

SHAD abound in the Hudson and Delaware rivers and Chesapeake Bay, and furnish a large supply of our food, being largely sold fresh in our markets, and also salted to a considerable extent.



The new process of keeping it fresh by freezing is very commendable. When fresh, shad are solid, the scales are bright and the gills crimson; when the eyes sink and the gills turn a whitish cast, and become soft, they are then unfit for food. The legal time for catching commences April 10th; they are in season until June. Like the salmon, the shad is a sea fish, only entering fresh water to deposit its spawn, during which time they are taken in immense quantities with large seines.

SHADINE. A name given to very small menhaden fish put up in oil and sold as sardines. The packing is now out of the market, the manufacturers having failed.

SHADDOCK. A large fruit of the orange kind, often seen in our fruit stores, which is imported from the West Indies and used to flavor punches, make lemonades, and also in preserves. It has abundant juice, which is very sour, and being so much larger than the lemon, it preserves its freshness longer.

SHAKER GOODS are those put up by the Shaker communities, and are noted for their purity and cleanliness. These

communities exist in different parts of the country, and are religious bodies engaged in agricultural pursuits, to which, for the better marketing of their products, they add the business of canning, herb-drying, and the making of fruit butters, jellies, etc.

SHELLS. The shell or outer covering of the cocoa bean prepared by roasting, for making a beverage which tastes like chocolate but is not so rich, and, therefore, more healthy. Its use seems to be somewhat limited to New York and New England, where it can commonly be found on the bill of fare at restaurants and hotels.

SHELLBARK. A species of hickory nut, with a thin shell.

SHOT. One of the secrets of the manufacture of shot, says the *Baltimore American*, is the mixing of the lead with a certain proportion of a combination of mineral substances called "temper." The temper is fused with the lead, and gives the metal that molten consistency which makes it drop. If it were not for the temper, the lead would be moulded by the sieve, and would form little pencils instead of round shot. When "BB" shot, for instance, are to be made, the lead is poured into a pan perforated with holes corresponding to that size. The little pellets come pouring down in a continuous shower, and fall into a tank filled with water on the ground floor. In their descent of 200 feet they become perfect spheres, firm and dense, and are tolerably cool when they strike the water, although the swift concussion makes the tank foam and bubble as if the water was boiling furiously. The shot must fall in water, for if they should strike any firm substance they would be flattened and knocked out of shape. An elevator with small buckets, similar to those used in the flour mills, carries the shot up as fast as they reach the bottom of the well, and deposits them in a box sixty feet above the first floor. The water drips from the buckets as they go up, and not much is poured into the receivers above, although it is intended to be a sort of dripping machine. From this receiver the shot runs down a spout into a drying-pan, which greatly resembles a gigantic shoe made of sheet iron. The pan rests at an angle, which permits the wet

shot to run slowly down to the chamber below, and the pellets become perfectly dry as they pass over the warm sheet iron.

SHOW CASES. Every progressive grocer should have a show case and keep it in first-class order. The truth that goods well displayed are half sold, is the strongest argument in favor of well-polished plate glass, both in the grocer's window and on his counter show case. Fine goods can be opened and displayed in such a way as to tempt every customer and yet be removed from dust and fingering.

SHERBET. A beverage made of orange juice, sugar and water, like lemonade. It is usually scented with rose water or some other odor, and flavored with spices, and is extensively used among the Mohammedans, who are forbidden by the Koran to drink intoxicating liquors. Many varieties of drinks are called sherbets in other countries, some even containing rum and currant wine.

SHERRY. A wine made from Xeres or Andalusian grapes. It is a rich, dry wine and contains a considerable amount of alcohol, usually about twenty per cent. There are two kinds of sherry, pale and brown. The adulteration of sherry is very easily accomplished, by adding to it other cheap, pale wines and bringing it up to the requisite strength by adding brandy.

SHRIMPS. A small fish slightly allied to the lobster, and largely caught in Great Britain and used in a potted form and in sauces. Prawns, or big shrimps, are much larger and possess a



more delicate flavor. They are in season the whole year, but mainly in demand in the summer for use in salads. The best form in which they come before the trade is as packed by G. W.

Dunbar & Sons, of New Orleans, under the brand of Barataria Shrimps. These are canned in a patented manner, the contents being enveloped in a bag inside the can, and are very choice. Grocers should never sell a can of any meat or fish in the summer without urging on the buyer to keep the can on ice before cutting it. Meats, salmon, lobster, crabs, and shrimps are disgusting to

many people when taken out of the can in a flabby and warm condition, and simple as the advice may seem, it is very often neglected.

SHRUB. A West India drink, made of rum, lime juice, sugar and water.

SIEVES are made for various uses, such as flour, fruits, teas, etc. Patent flour sifters, made to fit the head of the barrel, are very convenient.

SLAW, or Cold Slaw, is cabbage sliced and served with vinegar, or sometimes dressed with cream.

SMELT. A very delicate little fish of the salmon or trout family, which, when fresh, have an odor like cucumbers, weigh about two ounces, and are eaten bones and all.

SIFTINGS. See *Tea*.

SMOKED MEATS should be very carefully protected in summer if not canvassed, and even then they should not be allowed to lie tightly packed in their tierce any longer than necessary. A simple and inexpensive method of keeping uncanvassed meat in hot weather, is to put them into paper flour sacks, tying the tops with strong twine and then hanging them from the ceiling, where the air can pass between them. The fresher smoked meats are the more palatable they will be, and in cities dealers should buy often and in small quantities in order to get newly-smoked stock. In the line of fancy canvassed hams, those of F. A. Ferris & Co., of New York, excel.

SMOKED SARDINES. A style in which American sardines are now put up. As the smoking reduces the size of the fish, many purchasers consider them the finest quality of imported sardines.

SNUFF is a form of manufactured tobacco used very extensively. The grinding is usually effected in mortars made of wood. Some kinds of snuff are prepared from kiln-dried tobacco while others are made from soft leaves. The varieties are numerous, and some profess to have medicinal properties. The habit of snuff-taking is much less general than formerly, but snuff-rubbing

has extended widely through the South and Southwest, and large quantities are manufactured expressly for that trade. The oils used in perfuming are quite costly and form one of the most important items in the manufacturers' bills of expense. They vary in price from two to three dollars to over a hundred dollars per pound. Oil of roses, which is used in scenting many kinds of snuff, and which is a great favorite with snuff-takers, costs the manufacturers from five to eight dollars per ounce. Great quantities of oil of lemon, bergamot, and tonka beans are consumed annually in snuff mills. The tonka bean appears to be in special demand, and many old gentlemen and ladies can be found carrying one or two of them around in their snuff-boxes which they have possessed for years. The olfactories of snuff-takers are very sensitive to perfumes, and many manufacturers find it quite difficult to cater successfully to their tastes. The coarse rappee snuff is usually put up without being scented. After the snuff has been scented it is packed in jars, bladders, or foil, and stamped with the government internal revenue stamp. Yellow or Scotch snuff, as it is usually called, previous to being packed, is "scotched" upon iron racks before open fires. This kind of snuff is always packed in bladders previously prepared with a great deal of care.

SOAKAGE. An allowance made on articles packed in brine, in the shape of an extra tare to cover the weight of water soaked up by the wood. It is calculated according to the size of the package and other general conditions.

SOAP is supposed to be of Celtic origin, and became known to the Romans when they invaded Gaul. A complete soap factory has been unearthed at Pompeii. Soap consists of fats or other oily substances, mixed with water and alkaline ashes, so that saponification results. Its manufacture is more a matter of skill than of exact science, as the chemical composition of the articles which enter into it vary very widely, and much depends on the close attention and care of the workmen. Water being added to the alkali, a solution is formed, which is known as soap-lye. In making this lye, quick lime is added to the soda-ash to deprive it

of its carbonic acid and render it caustic. Weak lye is poured into a large copper pan and mixed with oil or fat, which are then boiled together and portions of stronger lye are added gradually until the saponification sets in and the soap begins to separate from the water. Salt is added at this stage, to hasten the separation, and the fire being extinguished, the soap collects above and the glycerine, the impurities, and the uncombined chemicals settle to the bottom. This salt water or spent lye is drawn off by cocks in the bottom of the pan. The soap is boiled somewhat longer to drive off the surplus water, and is then run into frames to cool. These frames are made of iron plates clamped together and set on wooden bottoms. The bottoms are mounted on wheels, so that they can be easily taken to the cooling-rooms. In four or five days the soap is cool enough to strip, when the sides of the frames are unclamped and the soap stands in a solid mass on the wooden bottoms. A machine with regulated wires cuts this mass into bars

Borax Soap (which see) is made of tallow and borax, and is a hard, white soap, possessing remarkable detergent qualities.

Castile Soap is made of olive and rape-seed oils. The imported article is a very superior soap, but plenty of American and English Castile are now sold which are very inferior. In making Castile soap, great care is taken to avoid an excess of alkali (the soda), only just enough being used to neutralize the oil. On this account the soap is much milder, and may be used on wounds and other surfaces where a common soap would irritate and give pain. The mottled appearance of Castile soap is due to a small solution of copperas (sulphate of iron) which is stirred into it before it hardens; this leaves a bluish oxide of iron in the soap, which, when exposed to the air, becomes changed to the red oxide. White Castile soap is sold, which is the same as the other, without the coloring. Though called Castile, it is by no means exclusively made in Spain, the largest share coming from the south of France, and, indeed, it is generally known in Europe as Marseilles soap.

Cocanut Oil Soap is known as *Marine Soap*. It is very hard,

and not being as much affected by salt water as other soaps, is much used at sea.

Cold Water Soaps are so prepared as to be serviceable in cold water, and find ready sale in families where it is inconvenient to have fires in summer.

Sand Soap is made by adding silver sand, or some of the silicates, to ordinary soap.

Sapolio is an article of silica soap, manufactured by Enoch Morgan's Sons & Co., and is the best of its class.

Soft Soap is a fluid compound made by boiling potash or alkaline wood ashes with fats or oils, and making a soap containing the glycerine and a large proportion of water.

Transparent Soap is made by dissolving the soap in alcohol and solidifying it again; shaving soaps are generally of this class.

The Frank Siddalls Soap is a pure and reliable soap, which, when used according to the Frank Siddalls way of washing clothes, gives great satisfaction and meets with unbounded praise.

Oleine Soap is made from rid vegetable oil, which may be considered one of the best materials for the manufacture of soap, and consequently the pure Oleine Soap is more expensive than many other kinds, and is one of the best soaps in the market for general use.

Yellow Soap has rosin added to the lye, and, indeed, most laundry soaps have this ingredient, which makes better lather, and is at the same time a cheap adulterant.

Adulteration of Soaps. Consumers of soap, says a writer in the *Deutsche Industrie Zeitung*, should not neglect to inform themselves of the real value of the wares they buy, and to prove the absence of intentional adulterations. A very old trick is to increase the weight of soap with water; but as ordinary soap soon loses this by evaporation in the air, this deception will not succeed unless the soap is sold off quickly. There are two other methods of overweighting. One consists of putting in chemicals that are adapted to hold this excess of water in the soap, so that it loses little or nothing in weight by laying. Another way is to

add some mineral substances, soluble or insoluble, to increase the weight and diminish proportionally the value of the soap. Artificially increasing the amount of water and adulteration with worthless chemicals pays well, and some manufacturers do a fine business by duping their customers.

It is no wonder that a housekeeper does not have her toilet soap and family soap analyzed, because she uses comparatively little of it, and is satisfied if it looks good and makes a good suds. When large consumers, however, neglect to submit their soap to an examination, they may suffer considerable loss. If soap was tested oftener than it is, more frequent complaints would be made public, and better wares would result. There is soap in the market that contains 75 per cent. of water, and externally cannot be distinguished from soap that contains only 12 per cent. It is easy to see how great a difference there may be in the value of two specimens of the same price. By simply increasing the amount of water, doors and gates are open for deception in soap, so that many manufacturers make a profit of a hundred per cent. by selling water instead of soap.

Gelatinous substances are most frequently used to retain the water in soap, and are at the same time an excellent filling. Alumina in the hydrated form performs this service best. The author detected this substance in six samples of soap, which had over 60 per cent. water, and were sold by their manufacturers at the same price as another manufacturer sold soap with 24 per cent. Other gelatinous substances, like silica, and organic substances, are used. They are easily detected by chipping up the soap and dissolving it in alcohol, in which they are insoluble, while pure soap is perfectly soluble. The undissolved residue may be filtered out and more carefully examined. Hot water will dissolve the gelatinous substances if they are organic, like gelatine or glue, leaving alumina, silica, etc., unaffected. By evaporating the aqueous solution and weighing the residue, the quantity of gelatine can be determined. The silica and alumina can be dried, then ignited in a platinum or porcelain crucible and weighed.

Waterglass is frequently added to soap, and, although it is not an injurious ingredient, such soap can be made cheaper, and should be sold as waterglass soap. In some samples the author found starch, gypsum, chalk, clay, phosphate of lime (bone ash), and barytes, or blanc fixe, as the adulterants. All these can be separated by dissolving the dry soap in alcohol. The alcoholic solution may be evaporated to dryness, dried at 212° Fahr., and weighed.

SOAPSTONE, or Mineral Pulp, as it is called, when ground for purposes of adulteration, is said to be used in adding to the weight of butter and flour. If a test tube containing butter is put in boiling water, it should turn to a clear oil; if it is cloudy, return the tube to the hot water, taking care that it does not boil, and that the melted butter is not shaken. If a sediment is formed something is wrong.

SODA was originally obtained from seaweed; but when the war between France and England led to the offer of a large reward for the invention of a process for the production of soda, a chemist named Leblanc discovered the present process of obtaining it from salt. Common salt is a chloride of sodium. By treating it with sulphuric acid and water, the hydrogen of the water combines with the chlorine of the salt and forms hydro-chloric acid, leaving the sodium, sulphuric acid and oxygen to unite in the separate article of sulphate of soda. Formerly the hydrochloric acid was allowed to escape into the air, but it destroyed all vegetation near the works, and now it is absorbed in water, which trickles over a chimney filled with coke, through which the acid is passed, running off at the bottom of this condenser as a strong, liquid acid. The sulphate of sodium is then mixed with carbonate of lime and coal or charcoal, and roasted until it is termed black-ash. By dissolving and evaporating a mixture of soda, salts result which include caustic soda, sulphate of sodium, etc. This is thoroughly calcined along with sawdust, and soda-ash results. It contains only fifty per cent. of pure soda, mixed with water, sulphur, and some salt.

Soda crystals, or common soda, used for washing, is made by dissolving soda-ash in water, filtering the solution and then boiling it until it reaches a specific gravity of 1.3, when it is transferred to a cooler, where it crystalizes in about ten days.

Soda is now manufactured by the Pennsylvania Salt Company, at Natrona, from the mineral cryolite, which is found in enormous masses in Greenland.

SORGHUM SUGAR. The *Nation* says that a striking feature of American agriculture is the enormous aggregate yield of most of the crops which are cultivated. This truth is now receiving new illustration by a great movement in the cultivation of sorghum for sugar, which is rapidly becoming a matter of truly national significance. The great production of glucose from corn may, however, check the cultivation of other sweets.

Nearly thirty years ago, the French Consul at Shanghai sent home seeds of a sugar-producing sorghum which attracted much attention, for it was seen at once, and perhaps even more clearly than it is now, that a Northern sugar cane would be a great desideratum. It was not long before other varieties of the sweet sorghum were brought from Zululand to Europe, and both the Chinese and African plants were soon introduced into this country, where their seeds were widely distributed. Hopes were entertained at that time by many people that the general cultivation of sorghum at the North would have an important influence upon the great question of the day—the relations of slavery to labor; and no little excitement attended the dissemination of the plants. These anticipations were not to be immediately realized. On the contrary, it soon appeared that, although the sorghum plant yielded an abundance of sweet juice, there was some difficulty in the way of getting from this juice profitable quantities of the solid, crystalized sugar. It was shown, indeed, long ago, by the highest chemical authority, that there is an abundance of cane sugar in the sorghum plant, particularly when it is thoroughly ripe, and it is now known that the failure to get crystalized sugar, though due in some part, perhaps, to the immaturity of the plants, must be

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attributed to improper methods of procedure in attempting to clarify the juice and to prepare the syrup for crystalization. It has been finally made clear that unless the juice is properly managed most of the cane sugar contained in it easily changes to an uncrystallizable variety of sugar, so that nothing but molasses is obtained on evaporating the juice. The necessary operations are not difficult, but they require prompt action. The juice should not be left to itself after expression; a small quantity of lime must be added to it, to neutralize the slight natural acidity, and the defecated juice should be boiled down speedily to the consistence of syrup. As in the making of maple sugar, very simple appliances yield good results.

After a few years of active effort, the conviction became general that there was no likelihood of the plant's competing with the sugar cane of the South, and with this conclusion the general public lost its interest in the subject. But many farmers continued to grow small quantities of sorghum for the sake of the syrup, which was readily obtained, and served to replace molasses for household use.

At the West, the African varieties of sorghum seem to have been preferred to the Chinese, because the plant itself is less liable to be broken down by prairie winds, because it ripens earlier, and because its juice was thought to crystalize more readily. For a number of years samples of crystalized sugar have occasionally been prepared from sorghum syrup at the West, and a certain mild interest in the question of sugar-making has been manifested there all along, until, within the last year or two, the attention of the agricultural public has again been everywhere awakened, and the conviction has become general that the subject is really one of vast importance.

The period of comparative quiescence which succeeded the excitement of twenty years ago appears to have been of no little use in perfecting the sorghum plant and the processes by which sugar is prepared from it. Both the Chinese and the African plants were introduced into this country, and by the crossing and hybrid-

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izing of varieties, new and better kinds of sorghum have been obtained, several of which are particularly well adapted for the Northern States. It is claimed for the several varieties that one or another of them will succeed wherever Indian corn can be grown, and it seems to be plain that henceforth the corn-growing States are to be sugar-producing States also. It grows well on "corn-land" even of the lighter and drier sorts, and has no marked needs or peculiarities to be studied and allowed for; and since every farmer in the land knows how to grow corn, the transition to sorghum cannot fail of being easy. Our farmers have, moreover, in process of time, arrived at singularly cheap and effective methods of corn-growing which are almost absolutely applicable to the new crop.

Both the cheapness of its culture, and, practically speaking, the familiarity of farmers with the methods of culture, place sorghum upon a wholly different footing from the sugar beet. To say nothing of our climate, to which sorghum in its several varieties is now well suited, the beet-root is known to require rich ground, careful culture, and much labor. Another advantage to be credited to sorghum, is the freedom of its juice from offensive impurities. Beet juice is contaminated with some substance which renders the brown sugar obtained from it unfit to be eaten. In order that it may be palatable, beet sugar has to be refined to brilliant whiteness, and the molasses obtained in the process of manufacture is useless except for purposes of distillation. The better kinds of sorghum are free from this reproach. The juice of approved varieties has no disagreeable flavor, and both the brown sugar and the molasses obtained from it are palatable and fit for domestic use.

Professor Collier, of the Department of Agriculture at Washington, finds that there is no difficulty in making from sorghum an abundance of sugar of first-rate quality. He confirms the fact that the percentage of crystallizable sugar in the juice is largest when the plant is dead ripe—that is to say, when all parts of it have thoroughly matured. His plants maintained this condition

of maximum sweetness very well when once it was attained, some of them for a period of two months, which gave him nearly twice the time that is commonly had in Louisiana to work up the cane. He finds also that former failures to get crystallized sugar from sorghum are to be attributed for the most part to improper manipulation of the juice after expression. In a number of trials, with samples of sorghum from various localities, he obtained, as the average yield, more than a ton of sugar to the acre of land. In one instance he got three tons of sugar to the acre, and has no doubt that from some of the Southern varieties two tons of sugar may be obtained practically. The significance of these results is well brought out by the statement of the Commissioner of Agriculture that there were imported into this country from abroad in the year 1878, 1,741,650,000 pounds of sugar, to say nothing of molasses, while the yield of sugar from the tropical cane in the Gulf States amounted to only about 250,000,000 pounds. Our people are said to consume sugar at the rate of about forty pounds to each person every year; but for 50,000,000 inhabitants this would amount to a couple of billions of pounds, which, at no higher price than five cents per pound, would come to \$100,000,000 per annum.

SOUP is a well-known form of food made from vegetables and flesh, either separate or combined. Soups of all descriptions are now packed in hermetically sealed cans, and are a very great addition to the comfort of the cook, being prepared for the table almost immediately. There are also many extracts made which simply require the addition of water to make a good basis for soup. The canned soups put up by Huckins, of Boston, are excellent, and the dry soups, or desiccated packages of ingredients for making soups, put up by Tyrell & Co., of New York, are very convenient.

SOUCHONG. See *Tea*.

SOY, a brown sauce made from a bean grown in China and Japan. Being a very desirable article it is often counterfeited. It should not be too salt, nor too sweet, and although thick and

syrupy, should be clear. When shaken in a bottle or glass, it should leave a bright yellowish film on the glass, if it is genuine.

SPECIALTIES. Under this head may be included everything relating to special lines of goods not usually sold by others. A grocer can in no way improve his trade better than by the introduction of specialties, by so doing he will constantly attract the public, and his store will eventually become a popular ONE. Care should be taken that the specialties handled are solid and not worthless. (See Humbugs).

SPECULATION on the part of a dealer is to purchase more than his requirements demand, or in other words more than is sufficient, of any line of goods for the regular conducting of your business. Generally speaking, to the bulk of the trade speculation is an evil. Many fortunes of considerable magnitude have been made by it, but at the same time many more have been lost. More money is made by far and at one tithe of the risk and anxiety by legitimate, steady business. We do not say never purchase more than your wants, but this we do say, and most emphatically, never purchase more than you can pay for without inconveniencing yourself in your regular business. A man's time, energy, and capital which he spends in speculation if directed to his store, and in improving his trade, will in nine cases out of every ten be productive of infinitely better results. Make your store your speculation, and the result will be highly satisfactory.

SPEARM OIL is procured from the blubber of the sperm whale (see Whale Oil). It is sometimes used by families, with a little water to sprinkle rose bushes and free them from bugs.

SPEARMACETI. A white, waxy, unctuous substance found in a cavity in the head of the whale, and obtained from the oil and brains of the Spermaceti whale which inhabits the Southern Ocean. Good spermaceti comes in fine, white, smooth and nearly transparent flakes, dry and fryable, though soft to the touch. Its taste is somewhat like butter, with a faint tallowy smell. Is much used in making candles and for medicinal purposes; also in the laundry for giving finished surfaces to household clothing.

SPICES are very highly prized goods possessing rich flavors and pungent and aromatic vegetable qualities. These substances are almost wholly produced in tropical climates and are as varied as they are useful. Their value chiefly depends upon the aroma and pungency which are contained in their essential oils. Spices represent different portions of their respective plants; for instance some as ginger are from the root; cinnamon and cassia are the bark, while the peppers, pimento, mace, nutmeg and vanilla belong more particularly to the fruit. A large number of spices are imported from South America, but the greater number come from the East Indies. Spices enter largely into a grocer's goods-list, and are of appreciable value in the manufacture of sauces, soups, salads, confectionery, &c. Great caution and good judgment are necessary in their selection, while their ornamental display will oftentimes draw trade.

SPIRITS OF WINE. See *Alcohol*.

SPONGE. This light, porous and elastic substance may be described as a zoophyte springing partly from an animal and partly from a plant. These zoophytes or sponges are attached to rocks from which they are readily detached by the diver's spear. American sponges come from the West Indies and the extremity of Florida. But they are not sufficient to supply the demand in the United States alone, and so sponges are imported from the Mediterranean also. Many of the West Indian sponges are exported from New York to London, Paris, Germany and Holland. They are especially useful in washing carriages and for similar purposes. Common bath sponges are from the Mediterranean, and Syrian sponges are the kind used in hospitals and by surgeons. The Florida supply is growing smaller year by year, and prices are accordingly higher.

SPONGE BLUE. A form in which ordinary blueing is held in a sponge inside a tin box, and from which it is extracted by dipping the box in water and pressing on an inside and movable lid. It is very convenient.

SPINACH OR SPINAGE, a vegetable prepared either by

boiling or frying with butter. It was originally imported from Europe, and is much cultivated in the gardens of this country.

SPRAT is a small herring caught in abundance in many parts of Europe, and extensively used in the form of smoked fish. They are sometimes packed and sold as sardines, the difference is very slight, either in size or flavor.

SQUASH. A species of gourd easily cultivated and existing in many varieties and shapes. It is used as a vegetable either stewed or baked, and sometimes as a substitute for pumpkin in pies. It arrives in market about the middle of June, and the winter varieties continue in use until the following May.

STAPLE, a commercial term given to the most important articles of merchandise. It was originally used to designate a fair or market—later on it became a name for a wholesaler, as a wool-stapler, and now it has grown into general acceptance as above.

STARCH. Commercially, there are two kinds of starch, those used for food and those used for manufacturing and laundry purposes. The former are such as arrow-root and corn starch, the latter chiefly made from wheat, rice and potatoes. Large quantities of sago starch are prepared in India and exported to Europe, and small quantities are made from such fruits as the horse-chestnut.

For such as arrow-root or sago, see articles under those headings. Corn starch is made principally from maize, which contains about 81 per cent of starch, but many manufacturers prefer that obtained from rice, some of the best in the market being derived from it. It is manufactured as ordinary laundry starch is, with less acid in its constituent parts.

The manufacture of starch from potatoes is described as follows: The potatoes are received in an upper story, weighed and "dumped" into the basement. From here they are carried to a long trough, through which passes a wooden cylinder; from this project several arms, which slowly revolve, keeping the potatoes constantly in motion, while streams of water continually fall upon the mass, escaping from the bottom. These revolving arms grad-

ually move the potatoes to one end of the tank. Here they fall into the grater as clean as it is possible to wash them by hand. The grater is an iron cylinder with projecting points which crushes, grinds and pulverizes the potatoes into a pulp. The pulp falls upon a long sieve in motion, and upon this is constantly falling a shower of pure water which washes down through the meshes of the sieve all the starch, nothing being left but the potato skin and the broken walls of the starch cells. This refuse is carried in long spouts out of the building into the river. It is regarded as entirely worthless for any purpose whatever—not fit for manure even. The starch used in solution is carried by other spouts into another portion of the building, and run into large vats like those seen in a tannery. Here in the course of twenty-four hours the starch settles or separates from the water, falling to the bottom. The water is then drawn off by means of faucets, leaving the starch as a semi-solid, pasty mass, which is shoveled up into large boxes, raised by windlass to the upper part of the building, where it is “dumped” into cars and wheeled away over a long platform to the “drying house”—which must be a distance from the other buildings. Here it is thrown upon a floor of “scantlings” nailed down with spaces between each of about $2\frac{1}{2}$ inches. The heat coming up from the furnaces in the basement rapidly dries the mass, which, falling apart, drops through to a floor below—the latter having narrower spaces. Falling through several of these floors it reaches at last the receiving boxes a fine powder ready to be put in the casks.

The manufacture of wheat starch is very different in some respects. It is converted into starch by fermentation of the wheat flour. It is first thoroughly mixed with cold water, and then placed in large round tanks made of plank. Here the temperature of the mass is raised, yeast is added, and fermentation is allowed to take place. This is continued for about two weeks, the workmen giving the tanks an occasional stir up to facilitate the escape of carbonic acid gas, which is formed by the decomposition of the gluten and some of the starch in the process of fermenta-

tion, When the process of fermentation has been completed the pulp is drawn out of the tanks into vats, which are hollow troughs. Here the stuff in each tank is attacked by four men with paddles, who work it in all directions, as if beating eggs, for some time—for several hours, in fact. After undergoing this “beating” process, the pulp is then put through two sets of sieves, fitted with straining cloth of the very finest texture. These cloths arrest a portion of the gluten, while the balance of it is held in solution and passes through. The starch is now allowed to settle in the settling vats, which are provided with plugs at intervals down the sides. The workmen in attendance, when the starch is mostly settled below the upper plug, take it out and allow the supernatant liquid to flow off. In like manner, as the volume of the starch descends to the bottom, plug after plug is taken out, until the starch remains in a pulpy condition at the bottom of the tank. Fresh water is then added, the mass stirred up again, and again allowed to settle, the water being drawn off in the manner described. It requires three such washings to remove the gluten from the starch. The liquid drawn from the starch in process of washing is pumped to an upper floor of the factory, where it passes by a very slight grade through a series of sprouts or conductors, which zigzag in and out of the building, finally discharging into a large tank in the yard, the contents of which are very nutritious, and are eagerly purchased by farmers to feed their hogs with. The object of the sprouts in question is to save what starch there may be remaining in the liquid drawn off, and the result is often quite considerable, being sometimes as high as 30 per cent. of the whole volume produced. The starch thus saved, however, is of an inferior grade, and is sold to calico manufacturers mainly for use in their industry. After settling in the tanks, the starch is next put into boxes about four feet long by eight inches wide and about the same height, and having a movable lining of ticking. The bottoms and sides of these boxes are pierced in numerous places with gimlet holes, so that the remaining moisture in the starch pulp can drain off. The boxes are packed full

of the moist starch and set away to drain for twenty-four hours, when it becomes a moderately solid mass. It is then taken out of the boxes and broken into squares of a size of about six inches. A car, running on a railway track, is now loaded with these squares of partly dried fecula, and run into a kind of oven or heated chamber. Here the squares are carefully laid upon the sheets of strong blue paper, resting upon the brick floor, through which the heat from below is radiated. A temperature of about two hundred degrees Fahrenheit is maintained in the apartment all the time. It takes a week in this room to thoroughly desiccate the starch, at the end of which time the blocks have become disintegrated or broken up into columnar forms so familiar to all users of starch. After thus being completed in its various processes, the starch is loaded into the car and brought out of the packing room, where it is put up for the market in packages of various kinds, principally in boxes and barrels, and appropriately numbered and marked. A barrel of flour will produce generally about one hundred and ten pounds of starch. The product is of three qualities ; the first—which is over 50 per cent. of the total volume used—being laundry starch. The second is a standard grade, used for the finer kinds of manufacturers' work, and the third, or sprout starch, has already been mentioned. It takes about four weeks to complete the process of starch making from wheat, from the time of mixing the flour until the starch is ready to pack.

STARCH POLISH. An article used to give a glossy finish to starched goods. It is made of many different ingredients, the main basis being some sort of wax such as spermaceti, paraffine wax, or bees wax. Gum arabic and isinglass are also used in connection with soaps or tallow for the same purpose.

STERINE, or steraric acid is the glyceride extracted by the aid of acid. It exists as glyceride in most fat, and is rudely obtained by saponifying suet and decomposing the hot solution of the soap by tartaric acid. It is extensively used in the manufacture of imitation wax candles, and in hardening lard for export or summer use.

STILTON CHEESE. The first cheese of this kind is said to have been made by Mrs. Paulet, of Wymondham. The following was given as the best receipt for making it at that period: "Take the milk of seven cows and the cream of the same number; heat a gallon of water scalding hot, and pour it upon three or four handfuls of marigold flowers that have been bruised a little, then strain it into a tub to your milk, and put some rennet to it, but not too much, to make it hard. Put the curd into a sieve to drain—it must not be broken at all, but as the whey runs from it tie it up in a cloth, and let it stand half an hour or more, then put half of it into a vat six inches deep, and break the top of it a little to make it join with the other, then put the other half to it, and lay a half-hundred weight upon it, and let it stand half an hour, then turn it and put it into the press, and turn it into clean cloths every hour the day it is made. The next morning salt it, and let it lie in salt a night and a day, keep it swathed tight till it begins to dry and coat, and keep it covered with a dry cloth a great while. The best time to make it is in August."

ST. JOHN'S BREAD (*Carob Beans*), often seen in fruit stores, is so called from a singular mixture of ideas which, because of the similarity of these pods to those of our ordinary locust tree, leads many to suppose that the food in the wilderness was not grasshoppers but locust beans! They grow in Palestine and all along the Mediterranean. The pods contain a succulent sweetish pulp, quite hard when dry, and are produced by the carob plant being nothing less than the husks with which the prodigal son would fain have filled himself, and which he was feeding to the swine; the original text of the scriptures reading carob for husks in our translation. They are extensively imported into England as food for cattle, but are only sold in this country as a curious fruit to little prodigals who are generally very ignorant of their history.

STOVE POLISH. Used to blacken stoves is based on graphite or blacklead. It is grossly adulterated in every form in which it is prepared and there is no greater security in purchasing

it in powder or in the shape of sticks, rolls or cakes. Some superior article it manufactured by the Jos. Dixon Crucible Works, of Jersey City.

STRAWBERRY is a native fruit of N. America, growing wild but greatly improved when brought under cultivation, consequently new varieties are constantly coming into the market which are produced from the seed. It is a very wholesome fruit. New Jersey and Delaware, are the states from whence the Eastern markets are supplied, Illinois and Michigan supply markets west. In California many are canned and shipped all over the country and to Europe.

SUCCOTASH. Green maize and beans boiled together. Both the dish and its name are borrowed from the native Indians. The beans were gathered and shelled, just as the pods were turning to ripen, and before they were dry and hard. These were placed in a pot and boiled until tender, a little salt having been added, if on hand and desirable. Next a quantity of green corn, shaved from the cob, was placed in the pot with the beans, and the boiling resumed until the corn was cooked, which took from fifteen to twenty minutes. It made a mess that was by no means bad to take. Modern succotash is something made on rather a different plan. Take ears of green sweet corn; before too hard, shuck and silk them; then with a sharp knife slice off the ends of the kernels and scrape out the inside; this do until a sufficient quantity is obtained; then put over the fire in a kettle with a very little water and boil fifteen or twenty minutes—no longer, as too much cooking hardens the kernels and makes them less delicate. It must be kept stirred at the last, or it will stick to the kettle and burn. When done, add salt and just a sifting of pepper, with a little butter and milk, or, what is better, sweet cream, a half teacupful or more, according to the quantity of corn. This, with baked new potatoes and good bread and butter, will generally be found to go off with a reasonable degree of relish.

SUGAR HOUSE SYRUP. Called in some sections "Blackstrap," is the dark partly burnt syrup, which results in boiling out all the crystalizable sugar from molasses.

SULPHUR. Commonly known as brimstone is largely produced in Sicily and abundant in Iceland, while California supplies a great quantity to her oil of vitriol works. It is largely used as medicine in the manufacture of matches, for making washes to destroy insects, and the production of sulphuric acid and gunpowder.

SURETY. *See Bonds of Surety.*

SWEET POTATO. *See Potato.*

SWELLS. (*See Canned Goods.*) With regard to this subject a writer in the *Packer's Review* says: "At the beginning, in discussing the subject of swells, it is well to observe that all vegetable matter after the process of growth is discontinued begins to decompose. Decomposition is its inevitable fate sooner or later. It is for the purpose of arresting this change that the packer exerts his efforts. Decomposition takes place by regular processes, which are governed by as well-defined laws as growth itself. The first step in decomposition is fermentation. It is of this principally that we shall speak. There are two kinds or two stages of fermentation—the *alcoholic* and the *acetous*. To understand fermentation it is necessary to know that all vegetable matter contains, besides other ingredients, sugar, water, and some of the albumens, such as gluten, albumen, and caseine. For simplicity, let us say that all vegetable matter contains sugar, water, and gluten. The first fermentation is the alcoholic. The gluten exposed to the air and moisture, putrifies; in so doing it acts upon the sugar, resolving it into water, carbonic acid gas, and alcohol. Having gotten thus far, we are now in a position to explain the object of sealing vegetables hermetically, and why they keep when so sealed.

"We have seen that fermentation begins by putrefaction of the gluten; by this process a yeast is formed, which is the actual ferment. This change of gluten into yeast cannot be accomplished without the presence of oxygen, which is the vital principle of air. We now can perceive that by excluding the air we remove one cause of decomposition. It may be further observed concerning

yeast that it is itself a growth, a germination of microscopic plants. The most potent destroyer of life is excessive heat. We can now understand the object of heat in the operation of preserving vegetable matter. It not only excludes the air, but it destroys the germs of decomposition. Taking up now a can of fruit or vegetables, let us observe the conditions necessary to its preservation :

“First: There must be expelled from it as much as possible of the superfluous air and the can made perfectly air-tight.

“Now let us suppose that a can has a leak. Through this leak the contents of the can become exposed to the air and fermentation ensues. Whether the presence of fresh air is sufficient to revive the dormant properties of the ferment, or whether the air itself bears with it the germs of decomposition, as it does the germs of disease, is a question as yet not fully decided; we are inclined to the latter opinion. Perhaps both facts are true; circumstances within our experience would seem to justify both theories. In the course of fermentation, induced by the admission of fresh air into the can, carbonic acid gas is thrown out. If this gas arises more rapidly than it can escape through the leak, the can swells by the pressure of the confined gas. If the leak is in the top of the can, the swelling is augmented by the fact that the escaping gas forces to the top of the can the solid portion of its contents, thus further hindering the exit of the gas by obstructing the passage. In such cases the can frequently bursts. Having described the effect of a leak, we may now inquire into the effect of a bad process, or, in more definite words, the application of insufficient heat.

“Heat may be said to be sufficient when it will destroy all the germs of decomposition. The amount of heat varies for different substances, and is by no means uniform for any one substance. If insufficient heat be applied to a can, in a short time after processing fermentation begins. The live germs and the least bit of air the can contains are doing their work; we say the air the can contains, for it will contain some air, however well it may be ex-

hausted. If there be sufficient air in the can, the contents will swell and burst the can. Sometimes the quantity of air in the can will not generate sufficient carbonic acid gas to explode the tin, although it will be swollen, or at least be a spring bottom.

“During this long parenthesis we must not lose sight of the second process of fermentation—viz., the acetous fermentation. We have seen that in the alcoholic fermentation alcohol is formed. In the second process this alcohol is turned into acetic acid, the sour principle of vinegar. In this, as well as in the former case, the ferment is the active principle. Here it causes the alcohol to take up more oxygen and the work is completed. So simple is the change from alcohol to vinegar that it needs but one atom of oxygen to accomplish the transformation, but this can be accomplished only through the action of the ferment. When in the last stage of fermentation, canned fruit or vegetables cannot be saved. If the alcoholic fermentation be detected in time, and the can is heavily exhausted to remove the air and the carbonic acid gas, the leak being closed, the can may be saved by the application of severe heat. But the heat must be much more severe than the original process, and the exhaust must be thorough. Such a can will have a not unpleasant alcoholic taste, especially so if the contents be very sweet.

“It may be well to append here some remarks on the effects of swelling upon the can-makers' work. The weakest place in a cylindrical can is the side seam of the body: when cans burst, it is here that the escaping gas generally finds its outlet. When the seam is sufficiently strong to resist the pressure, the cap is the next point most likely to yield. Rarely do we observe a can burst at the float. When such occurs, it is generally through some defect of the tin. The tin is invariably broken, leaving the rim firmly attached to the body. It is generally observed that when the pressure makes an exit for itself through the can, it is done with such violence, and the evidence of force is so apparent, that it is easy to distinguish a leak so made. It is impossible to confound such a leak with one made by the can maker. The

trade is much in need of a machine that will test cans rapidly and efficiently. It seems very crude that we should have to fill a can and risk its contents before we can tell whether it is good. We should not dare to treat our steam-boilers so. That would be more dangerous, but scarcely more expensive, than the loss on a bad lot of cans."

SUCCORY. Much used in France as a winter salad. The common way to grow this plant is similar to carrots. When the tapering roots have attained some size, they are lifted and the leaves cut off; the roots are then planted in sand, in a dark room or cellar where in consequence of the absence of light, the roots throw out white leaves, which make an excellent vegetable. This plant is the chicory of commerce (which see) used in the mixing with coffee.

SUGAR. Cane sugar is the crystallized portion of the juice expressed from the sugar cane, and forms the main article of a grocer's stock. We therefore treat it very fully in the following pages, and for the greater convenience to the reader divide the subject into the following heads :

1. The history of its cultivation,	.	.	page 220.
2. The manufacture of raw sugar,	.	.	" 221.
3. Refining processes,	.	.	" 224.
4. Centrifugal separator,	.	.	" 226.
5. Granulated sugars and other grades,	.	.	" 227.
6. Beet root sugars,	.	.	" 228.
7. Grape or starch sugars,	.	.	" 230.
8. Sorghum cane sugar,	.	.	" 205.
9. Corn stalk sugars,	.	.	" 231.
10. Tares on packages,	.	.	" 231.
11. The question of profit,	.	.	" 231.

The cultivation of the sugar cane (see full-page cut) and the manufacture of sugar were introduced into Europe from the East by the Saracens, soon after their conquest in the ninth century. It is stated by the Venetian historians that their countrymen im-



SUGAR CANE.

ported sugar from Sicily, in the twelfth century, at a cheaper rate than they could obtain it from Egypt, where it was then extensively made. The first plantations in Spain were at Valencia, but they were extended to Granada, Murcia, Portugal, Madeira and the Canary Islands, as early as the beginning of the fifteenth century. From Gomera, one of these islands, the sugar cane was introduced into the West Indies by Columbus in his second voyage to America in 1493. It was cultivated to some extent in St. Domingo in 1506, where it succeeded better than in any of the other islands. In 1518 there were twenty-eight plantations in that colony, established by the Spaniards, where an abundance of sugar was made, which for a long period formed the principal part of the European supplies. Barbadoes, the oldest English settlement in the West Indies, began to export sugar in 1646, and as far back as the year 1676 the trade required ships of four hundred and fifty tons burden.

Cane sugar is obtained from the cane juice in various ways, and the following very condensed account of the process of making sugar in Java, extracted from Chamber's Encyclopedia, will give some idea of the operation :

The canes, freed from all loose leaves, are passed through between the rollers under the greatest possible pressure that can be brought to bear upon them. The rollers revolve only from two to four times per minute. From 100 pounds of canes, 65 to 75 pounds of cane juice will be expressed. This juice, which is of a sweetish taste, and of the color of dirty water, passes direct from the mill to a small reservoir, where it usually receives a small dose of quicklime, and without delay runs off to large iron or copper vessels, heated either by a fire underneath or by steam-pipes in the liquid. As the temperature of the juice rises, a thick scum comes to the top, which is either removed by skimming, or the warm juice is drawn off from below the scum. The concentration of the juice is partly effected in a series of large open hemispherical iron pans about six to eight feet diameter, of which five or six are placed in a row, with a large fire under the one at the end. This

one fire, which runs along the whole row of pans, is found sufficient to make two or three of them nearest the fire boil violently, and in addition, it warms the juice in the pans furthest from the fire. As the juice first enters the pans furthest from the fire, it gets gradually heated, and the vegetable impurities rise in scum to the top, and are carefully removed. As the juice is ladled from one pan to the next, it boils with greater and greater vigor as it approaches nearer the fire, until in the pan immediately over the fire it seethes and foams with excessive violence; and this seems to be essential to the successful making of sugar. It is known that the presence of all those impurities which constitute the scum interferes with the crystalizing of the sugar; and the rapid ascent of bubbles of steam through the liquid in the pans carries all impurities dispersed through the body of the liquid to the top, where they can be removed with facility. It is well known that great heat is very destructive to cane juice; that is to say, it turns much of the crystallizable sugar into treacle or uncrystallizable sugar, but the gain arising from getting rid of much of the impurity in the cane juice more than compensates for the destruction of part of the sugar. After the concentration has been carried to a given point, and all the scum has been got rid of, the application of a high heat, which would act with an increasingly destructive effect as the condensation becomes greater, is suspended, and the liquor, now of the color of turbid port wine, and of the consistency of oil, is drawn into the vacuum-pan, where the concentration is completed at the lowest possible temperature, generally about 150 degrees Fahrenheit. The vacuum pan is in universal use in all European sugar-refineries, and in all well-provided sugar plantations. It is generally made of copper, of a spherical form, and from six to nine feet diameter. The bottom is double, leaving a space of an inch or two for the admission of steam between the two bottoms, and there is generally a long coiled copper pipe of three or four inches diameter above the inner bottom, so as to still further increase the amount of heating surface. This apparatus is made perfectly air and steam tight. Leading from its upper

dome there is a large pipe communicating with a condenser, into which a rush of cold water is continually passing, so as to condense all the steam or vapor that arises from the liquid boiling in the vacuum pan. The water which is constantly rushing into the condenser is as steadily withdrawn again by the pump. There is thus a constant vacuum in the pan, and, consequently, the liquid in it will boil at a much lower temperature than it would in an open pan or boiler. There is an extraordinary advantage in being able to effect the later stages of the concentration at a low temperature, for it is when the liquid becomes thick that the destructive results of a high temperature become most excessive.

As the concentration of the liquid in the vacuum pan proceeds, crystals of sugar begin to form, and the skill of the sugar-boiler is shown by the uniformity of the crystals he produces. The boiling is commenced by filling in only about a third or fourth of the quantity the vacuum pan will hold, and gradually adding more liquid as the crystals increase in size. The sugar-boiler is able to watch the changes going on in the vacuum pan by means of small samples he withdraws from it by means of a suitable apparatus. The sugar-boiler holds these drops of thick fluid on his finger and thumb, between his eye and a strong light, and is thus able to detect those minute changes in its condition which show that it is time to add an additional quantity. By the time the vacuum-pan is full, the contents have thickened, by the formation of crystals of sugar, into a mass of the consistency of thick gruel; it is then allowed to descend into a vessel called the heater, where it is simply kept warm until it can be run out into the 'forms,' which, in the sugar-growing colonies, are generally conical earthen pots, holding from one to two cwts of sugar. It is allowed to cool and complete its crystallization before the plugs, which close the bottom of the pots, are withdrawn. When this is done, from one-fourth to one-third of the contents of the form, which has remained in a fluid state, runs off into gutters leading to large tanks, from which it is again pumped up into the vacuum-pan, and re-boiled, yielding a second quantity of sugar. This reboiling of

the drainings is repeated, with a continually decreasing result, both as to quantity and quality of the solid sugar obtained, and it is rarely carried beyond the fourth boiling. If the planter wishes to obtain Muscovada or unclayed sugar, the process is now complete, and the sugar is turned out of the forms, and packed for shipment. In some cases the sugar is run direct from the vacuum-pans into casks or hogsheads, which replace the forms, holes being bored in the bottoms of the casks, to admit of the uncrystallized portion of the sugar draining out.

If *clayed* sugar is to be made, the forms are allowed to stand for a few days until all the treacle has drained out; and a quantity of thin mud, about the consistency of good thick cream, is then poured over the sugar to the depth of one or two inches. The water contained in this thin mud slowly steals down through the sugar, and mixing with the coatings of treacle still adhering to the outsides of the crystals of sugar, renders them less viscid, and facilitates their descent to the bottom of the form. The mud remains, at the end of a few days, in the form of a dry hard cake on the top of the sugar, and none mixes with the sugar.

The process of claying sugar is simply washing off a coating of black or yellow treacle from a crystal of sugar, simply because the treacle has a greater affinity for water than the crystallized sugar has. Anything that would yield a very slow and steady supply of water to the sugar, would do as well as mud or clay. There is always some loss of crystallized sugar in the process of claying, and attempts have been made to use strong alcohol for washing off the coatings of treacle from the crystals; but although alcohol dissolves treacle very freely, and scarcely acts on the crystals at all, still it has not been found to answer commercially. Besides the cost of the process, there is difficulty in getting rid of the smell of alcohol in the sugar.

Sugar Refining is described as follows in an article in the *New England Grocer*, and by Mr. Dresser, of the Mass. Institute of Technology :

“At the refinery the melting process is the first in order, and is

usually carried on in a building separate from the main refinery. The coarse, raw sugar, is emptied into a melting pan to which is added the sweetened water obtained from clearing the empty hogsheads by steam. The melting pans contain 4 to 6 hogsheads of sugar, and the crude mass is kept in motion and the lumps pulverized by stirrer knives. The liquid is drawn off through a sieve to rid it of chips, nails, etc. It is then raised to the clarifying house where it is placed in clarifiers or "blowups," large shallow pans, having at the bottom copper pipes through which steam circulates. The liquid is heated up to a temperature of 210 degrees Fahr. The process is a long one and requires careful watching, as to the moist sugars which contain more or less acidity, lime is added, while dry sugars—Manilas in particular—contain too much lime and have to be treated with an acid or sulphurous gas. Alum is sometimes used. Before filtering, the liquid must contain an excess of lime to prevent fermentation. Bullocks' blood, fresh or dried, is used with the lower grades. The albumen of the blood gradually rises to the top as the heat increases, taking with it all the light impurities and leaving the heavier ones at the bottom. Between the top and bottom a clear liquid is left which is drawn off and passes through bag filters several feet long, which are double consisting of an outer and an inner bag. Where formerly but 100 bags were put into a single filter, 400 to 800 are now used. The filtration is usually very rapid.

From the filters the liquid passes to the receiving tanks below. It is of a dark color, but very clear, being freed from great impurities, but still retaining gum, lime, salts and various mineral substances which can only be removed by charcoal or boneblack filters. This has the power of removing these organic impurities and assists the granulation of crystals. Charcoal filters are generally 10 ft. in diameter, 20 ft. deep and hold 90,000 lbs. of charcoal. This charcoal is made from beef bones which are burnt and ground for the purpose. So important an agent is it that refiners term it the "soul of the sugar refinery." Some of our refineries have 4,000,000 lbs of it in constant use. It is used over and

over again, being made as good as new by a process called revivification. This filter was first introduced in the French beet sugar factories by M. Dumont. One pound of bone black is used to every pound of sugar manufactured.

The next process is concentrating and crystallizing the liquid, which is placed in vacuum pans generally made of cast iron. They have been made as large as 65 feet in circumference, but are often of copper and only 22 feet in circumference. The larger the pan the larger the sugar crystals, more refined sugar and less syrup. Small pans are mostly used in mould houses. When the syrup is first run into the vacuum pans the temperature is about 140 deg. Fahr., but it is lowered to 125 degrees when the liquid begins to granulate. More thin liquid is added till the pan is full. When fine grained sugar is desired the boiling must be conducted under higher temperature; for coarse grained sugar a lower temperature is required. The vacuum pans hold many barrels of crude sugar and some refiners turn out 3000 bbls. daily.

The Centrifugal Separator. Formerly the sugar was passed from the vacuum pans through the intervening heater, which received it directly into the moulds (as in the claying process), for separating the mother liquor from the crystals and making them white; but for this purpose centrifugal machines are now most generally used, thus substituting steam power for the slow process of gravity. This machine consists of a kind of round metallic basket, usually about thirty inches diameter (but some are now made larger), with sides of very finely perforated brass, twelve and fourteen inches high, and surrounded by an iron curb a few inches larger, which receives the syrup from the sugar in the basket and conducts it away. This basket is either suspended by a perpendicular shaft from above, or mounted on one from below, independent of the curb which surrounds it. After being filled from one-third to one-half its weight with semi-liquid sugar from the pan, it is made to revolve in a horizontal plane one thousand and fifteen hundred times per minute. The sugar immediately rises in vertical walls at the sides, the syrup being thrown out.

through the perforations, and from the native yellow color it begins to grow white immediately, and after a very few minutes, if it be of first quality, a little cold water from a sprinkler makes it beautifully pure and white. It is now in condition to be removed and sold as confectioner's or coffee A sugar, or by further treatment to be made into the well-known granulated sugar of commerce.

Granulated Sugar. This very popular and strictly American style of sugar was first made and introduced about thirty years ago at the Boston Sugar Refinery. Although extremely popular in the United States since its origin, it has become popular in England only within a few years past. The apparatus at first consisted of a steam table fifteen or twenty feet long and three to five feet wide, on which the moist sugar was, by an ingenious process or movement of wooden rakes, gradually worked the length of the table, becoming thoroughly dried in so doing. Afterward it was separated by sieves of different grades or mesh, into coarse and fine, and barreled and sold accordingly. This apparatus was superseded ten or twelve years since by a large cylinder of wood or iron, some four feet in diameter and fifteen to eighteen feet long, slightly depressed at one end. The inner surface carries small projecting buckets, by which, as the cylinder revolves, the sugar, entering at the upper end, is lifted and poured through the heated interior. The heat is supplied by a small steam cylinder running through the length and center of the large one, and the position of the buckets is such as gradually to work the sugar through the length of the cylinder, during which it becomes thoroughly dried. An arrangement of sieves, as before, completes the operation. The upper one has the coarsest mesh, to retain the largest grains, which are run directly from it into barrels and branded "extra granulated." The sugar which falls through this first sieve drops into the next below, which has a mesh just fine enough to retain the grains next in size to those before mentioned, which are run into barrels and designated as "medium granulated." The remaining sugar, too fine to be retained by either

sieve, is packed in barrels under the name of "fine granulated." Powdered sugar is mostly manufactured from the coarsest granulated sugar, after it has been thoroughly cooled. The powdered articles, are mostly manufactured in smaller establishments as a specialty.

Other grades of sugar are obtained from the liquor or syrup which is thrown out by the centrifugal, in the process of separating the crystallized sugar from the "mother liquid." This syrup contains 40 per cent. of sugar capable of being crystallized and available to commerce. This is worked over and over again by the refiners, till most of its sugar or sweetness is extracted. These different manipulations give rise to different grades of sugar offered on the market, and to what is called sugar-house syrup, which comes last in the order of manufacture. To illustrate; suppose the refiner to take 1000 pounds of raw sugar, he obtains first 50 per cent. or 500 pounds of sugar suitable for the best granulated sugar; then, by working over the syrup which is left, he obtains 10 per cent. or 100 pounds, of "coffee A;" then, again, by working over what is left from the last, he obtains 15 per cent. (of the original 1000 pounds), or 150 pounds, of "coffee extra C;" the residue still remaining is again manipulated, and 15 per cent. or 150 pounds, of "coffee C yellow" is obtained; of what remains after this, 5 per cent. or 50 pounds, remaining to be accounted for in making up the 100 per cent. or 1000 pounds we started with, may be put down as the actual loss to the refiner, though this really varies, according to the quality of the raw sugar employed and the skill with which the refining processes are carried on.

Beet Root Sugar. The soil and climate of this country in many localities are admirably adapted to the cultivation of the sugar beet, the best of which is of the white Silesian variety, and there will be no lack of material. The greatest obstacle to the increase of the industry in the United States is the difficulty of procuring workmen skilled in the crystalizing process. The establishments now in existence here were first operated by workmen imported from Europe. Most of the operations in manufacturing

vegetable sugar are nearly the same as the sugar-cane juice is subjected to, but it is in rendering the beet-root juice crystallizable that the utmost skill and nicety are required. This is owing to its greater rawness and the smaller relative proportion of sugar it contains than cane juice.

Marggrof, a Berlin chemist, was the first person who extracted sugar from beet juice. This was in 1747, but the manufacture was not developed in Europe until about fifty years later. It was first commenced in France, in consequence of the Emperor Napoleon's scheme for excluding British colonial produce. The process has since been much improved, and beet sugar now competes on nearly equal terms with cane sugar in the markets of the world.

The white Silesian beet is preferred in Europe for sugar making, as it yields a juice richer in sugar and more free from salts than that of other kinds. The weight of the largest ones is about five pounds each, and the yield per acre in France and Belgium is fourteen or fifteen tons. When the leaves of the beet begin to die, the roots are dug, the heads cut off and the beets thrown together and covered to protect them from light and frost. They may be kept for some time. In the factory, the beets are washed clean in a cage revolving on a horizontal axis and partly immersed in water, and when washed they are discharged by the action of the machine itself. A grating-machine of the form of a rotating drum, the inner surface of which is studded with teeth, tears open the cellular tissues and frees the juice. The pulp is then subjected to powerful hydraulic pressure and the resultant is ready for the crystallizing process, which is, of course, the same as that employed in cane-juice crystallization, requiring, however, as has been said, much greater care and skill.

Maceration has also been employed to separate the juice, by cutting the beets into thin slices and letting several charges of water pass through a cistern containing them, the water gradually acquiring density by taking up the beet juice. By this process, the juice is rendered very weak and is apt to ferment, and requires

much fuel to concentrate it. At Waghausel there is an immense factory, where a process is employed in which the beet is cut up into small rectangular pieces and dried upon floors, after which the sugar is extracted by infusion or maceration.

When the beet sugar is refined, it is almost impossible to distinguish it from cane sugar, either by the taste or the appearance. Five tons of clean roots produce about four-and-a-half hundred weight of coarse sugar, which gives about 160 pounds of double-refined sugar and 60 pounds of inferior lump sugar; the residuum is molasses, from which spirits are distilled.

Grape Sugar, or *Starch Sugar*, so called because it is readily obtained by the action of diluted acid on a hot solution of starch, is known also as Glucose, which is a constituent of the juice of grapes, plums, cherries, figs, and other sweet fruits, also in honey. It is not infrequently found as a healthy and sometimes unhealthy constituent in the animal world. Glucose can be obtained chemically from starch and from dextrine, but the simplest mode of preparing pure glucose is by treating honey with cold rectified spirits and extracting the uncrystallizable sugar; the residue being dissolved in water and the solution decolorized with animal charcoal and then allowed to crystallize. In Europe it is largely manufactured from starch by mixing starch and water at a temperature of 130° , allowing it to flow slowly into a receptacle containing water acidulated with one per cent. of sulphuric acid and kept at the boiling point. Thus in the short space of half an hour the starch is converted into sugar. The liquid is next drawn off and the sulphuric acid neutralized by gradually adding chalk, till effervescence has ceased. A deposition of sulphate of lime takes place, and the aqueous solution after concentration by evaporation is allowed to crystallize. The molasses is drained off and the sugar is dried at a gentle heat in a current of air. Dr. Muspratt, in his *Chemistry Applied to Arts and Manufactures*, says: "The chief use to which glucose is applied in Europe is for the manufacture of beer and a coarse kind of alcohol, which is said to be extensively converted into French brandy by the addition of oil of rais-

ins, coloring matter, etc." Glucose is extensively used in this country in the manufacture of candies, and for mixing with cane sugar.

Cornstalk Sugar. At a recent meeting of the American Agricultural Association in New York city, Dr. Peter Collier, chemist of the Department of Agriculture at Washington, stated that during the past year there have been examinations made of thirty-eight varieties of sorghum grown in and received from fourteen different States, and from nine varieties of Indian corn. The results of analyses made, 1,318 in all of the sorghums, showed them to yield, on an average, 1,662 pounds of available sugar. From four of these varieties the sugar was extracted in quantity and at a rate of fully 2,000 pounds per acre. As to cornstalks the results were most satisfactory, but the experiments were not so numerous as with sorghum. An average of twenty-six analyses of the nine varieties examined showed them to contain in their juice an amount of sugar greater in quantity than the average of the best thirty specimens of the sixty specimens of sugar beets grown in different parts of the country. After a large crop of ripe corn had been gathered, the stalks yielded at the rate of over 900 pounds of sugar to the acre, and there appears no reason to doubt that this result could be obtained upon a large scale.

Tares on Packages. The close selling prices of sugar make the dealer doubly jealous with regard to the tares on the barrels, and justly so since its sale is a losing one throughout. The refiners use kiln dried barrels which they weigh with the greatest accuracy, but as every subsequent exposure to the air or to dampness tends to swell the weight again the retailer is the loser in the end. The whole question of sugar needs the most thorough overhauling by the trade, and individual resistance to unjust tares and individual resolution to sell at a profit will go far toward rectifying the present ridiculous position of this expensive and profitless article in a grocer's stock.

The question of profit. Every grocer knows that sugar is the main item of his stock and that nine out of ten have sold it at a

loss for years. It is also true that nine out of ten have failed or kept poor while they did it. We have carefully investigated the matter and can assure the trade that many grocers always sell sugar at a profit and that they are the most successful men in the trade. It makes no difference about what others do—other people cheat and give false weight and sell poor goods and fail—shall the rest follow that example? If a grocer will deal honestly, give good measure and choice goods, and charge a profit on his sugars without saying a word about his neighbors, he will make quick strides toward success. A few years ago the agitation of the sugar question commenced. *The New England Grocer* took it up, the PHILADELPHIA GROCER followed with a series of articles some of which appear in the end of this volume—the effect was marked and to day in many cities and towns of the U. S., sugar is sold at a profit and the price is fixed by mutual consent and firmly adhered to. If the whole trade will only believe that it can be done universally—will only wake up to the fact that it *is* being done successfully in many places the reform will quickly gain ground. For additional suggestions on this most important topic we refer to the series of articles in the end of this volume.

SYRUP, is made from sugar in the process of refining (see Sugar). Very little of the syrup now sold is produced from sugar cane. It is generally starch syrup and is apt to contain lime, sulphate of iron and even pure sulphuric acid, remaining from the process used in developing the starch sugar or glucose.

TALLOW is the rendered or melted fat of animals, chiefly used in connection with beef fats. It is used for making soap and candles, and for softening leather. Its quality varies very widely, some grades which are carefully rendered and purified being free from odor or taste, while other renderings are so coarsely done as to leave the tallow in an almost disgusting condition. It is imported from Russia, South America and Australia, as well as produced in larger quantities at home and in all countries where meats form a staple of diet.

TALLY-TRADE. The name given in Great Britain to the

system adopted in the U. S., under the head of credit or installment houses.

TANKS (for Oils). Cheap but durable tanks of the most convenient forms are now offered for the grocer's convenience, and it is hardly possible to do without them. They serve as a check on the gauge of the barrel from which they are filled, save waste, are far more cleanly than barrels and spigots, and are an ornament to a store; the measures are always kept inside the lid, where they do no damage by their inevitable drip, which is thereby saved, as it runs back into the tank.

TAMARIND (The) is a native of the East Indies, but now cultivated in all tropical countries. It is a tree reaching a height of from 30 to 40 feet. Its pods are somewhat similar to those of a locust bean, but consist of a long thin shell filled with an acid-sweet, dark colored pulp. The shell, when the fruit is ripe, is of a dark-brown color. Inside the pulp large, flat, hard seeds are embedded. The pods are gathered in June, July and August, the shells are broken off, the pulp, together with the network of fibres which covers it, is thrown into casks, which are then filled with boiling syrup. They are generally imported in small 50-pound kegs, and are repacked in jars in this country. They make a very pleasant and laxative drink when mixed with either hot or cold water, or can be eaten as a preserve. In various forms tamarinds are used as medicine, and when mixed with other aperients are sold as prepared laxatives.

TAMPING. A term applied to the wrappings of bales of sago and other goods packed by the Malays, in whose language the word means "package."—i. e. Sago Tamping.

TAPIOCA, made from the starch powder of the roots of the bitter cassava or mandioc by heating it on hot plates, and stirring with an iron rod, the starch grains burst and are converted into small irregular masses. The starch is obtained by peeling the roots of the mandioc and subjecting them to pressure under water in bags or hampers made of rushes. By this process the juice,

which is a deadly poison, is forced out, leaving a perfectly wholesome and nutritious starch. Tapioca is never adulterated with foreign matters, and seldom with other starches. When at all, it is principally with potato starch, which can only be detected by the aid of a microscope. Being nutritious and easily digested it is a wholesome article of diet and extensively used in making puddings.

TARE. A deduction from the gross weight of goods, allowed to cover the weight of the package. *Actual tare*, is obtained by emptying the package and weighing it separately from its contents. *Average tare* is obtained by weighing a few of the packages and deducting from all the packages the average weight so ascertained. *Estimated tare* is arrived at by a reasonable allowance for the supposed weight without actually ascertaining it. After the deduction of tare, the balance is called *net weight*. Formerly other deductions were made after taking off the tare, one for waste through dust &c., being called *tret*, which was followed by lesser ones called *draft*, for the turn of the scale, *cloff* &c.

TARTAR, Cream of, (*see Cream of Tartar*).

TARTARIC ACID of commerce is made from argol, a product of the fermentation of grape juice. It is used in large quantities for dying and is much employed in medicine and all effervescing drinks, and baking powders of superior quality contain a proper proportion of this salt which stimulates the development of carbonic acid gas in the dough.

TASTE. This sense varies far more widely than is generally supposed. The trained and delicate taste of the wine or tea sampler is not merely a matter of education. To possess from birth a fine capacity for taste and smell is a primary requirement. In the act of tasting wines or teas, the expert does not drink the liquor; he passes it quickly and thoroughly around his mouth so that it may strike every part of its lining membrane, after which he as quickly spits it out. Bad health, or any temporary derangement of the stomach or the other organs which come into connec-





TEA PLANTATIONS. VIEW IN THE BLACK-TEA DISTRICT.

tion with the nose or palate limit the power of accurate taste. A large part of the more delicate matters of taste depend on the flavor which is an aroma affecting both the nerves of taste and smell together. Cigar samplers after testing so many brands that their sense of taste is dulled, resort to a free use of strong coffee which quickly refreshes it.

TEA. The rapidity with which this Eastern beverage has grown in popularity in the Western countries has no parallel, and certainly from its widespread and beneficial results it is impossible to point to a single rival. Technically, it is the leaves from a small tree of the genus *Thea*, some authors say *Camellia*, but the distinction and importance of the plant is derived from *T. Bohea* and *T. Viridis*. Many writers regard the Tea plant as a native of China and Japan, while others, hold that it is a native of Corea and was introduced into China about the fourth century of the Christian era, then to have extended to Japan about the ninth. Tea was first made known in Europe by the Portugese early in the sixteenth century. The Dutch East India Company introduced it in Holland in the early part of the sixteenth century, and many say it was from there it first found its way into England. However, it was not until the year 1657 that we have any authentic record of its introduction, and then it was considered a very rare luxury.

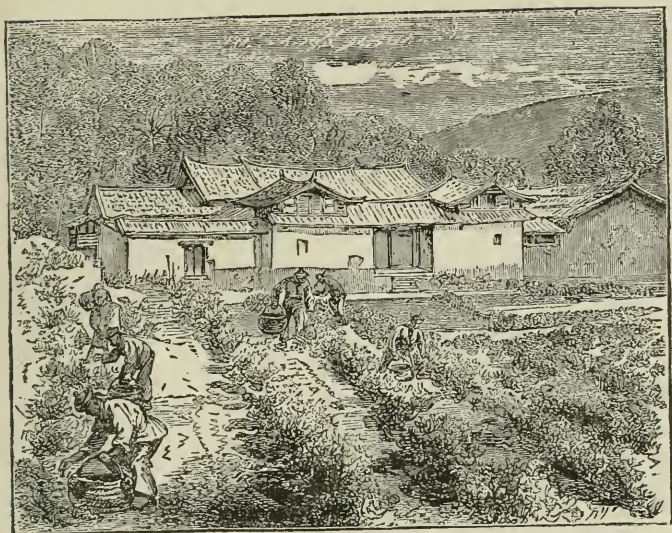
For a long period very great mystery existed as to whether the tree from which the Chinese collected green tea was identical with that from which they procured the black. The eminent botanical traveller, Mr. Robert Fortune, who was the first European or white man to penetrate into the interior of the celestial empire, thus speaks of the discovery he made. After giving a very glowing description of the scenery, he says: "Among the mountains, and at a height of from 2,000 to 3,000 feet above the sea level, I found the Black Tea district. I was desirous to ascertain clearly whether the plant was the same species as those in the Green Tea district. I was fortunate not only to find an extensive tea district, but also to be present when the natives were picking and prepar-

ing the leaves. I not only procured specimens for my herbarium, but also a living plant which I afterwards took to the Green Tea hills of the North and found on minute comparison it was identical with the *Thea Viridis*."

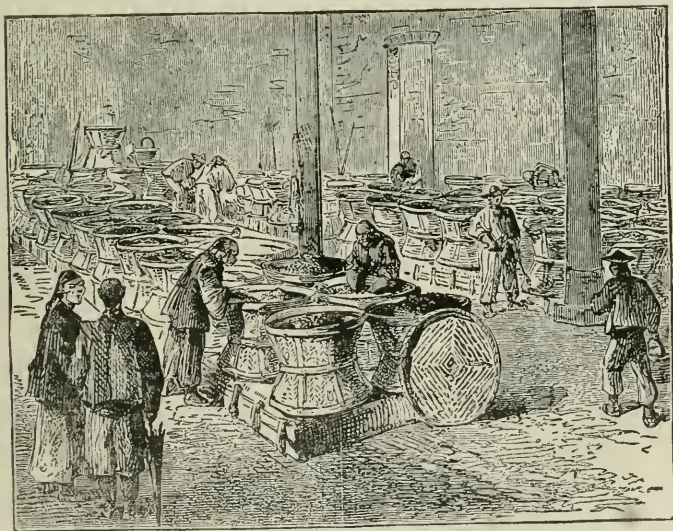
Thus it was proven that the many varieties of tea are entirely due to the different soil, climate, and preparation they receive at the hands of the manipulators.

The Tea plant is an evergreen, but the picking of the leaf is not commenced until April. The earliest buddings are gathered in the beginning of April, and are termed first pickings. These, as a rule, realize higher prices and are always retained at home for the use of the rich Mandarins. They are never imported commercially into this country. In May the general gathering commences, and it is from this collection that we receive our finest Tea. The leaf is carefully picked, each single leaf is plucked from the tree separately, but so expert is the picker that from six to ten pounds are gathered by each daily. (See illustration). This second picking is known to the trade as "first crop tea," and from it is made the finest Young Hyson, Gunpowder, Congou Souchong and Oolong Teas. Then follows later on in the season a second picking known as second crop Tea, and so on until sometimes a fourth gathering is collected, the quality gradually becoming inferior as the season proceeds.

For a description of the specific processes for obtaining the green and the black teas generally, we refer to Mr. Fortune's work (*Tea Countries of China*), or to Johnston's *Chemistry of Common Life*, vol. i. p. 161, in which it is quoted. It is sufficient here to remark, *first*, that, in the process of drying, the leaves are roasted and scorched in such a way as necessarily to induce many chemical changes in them; the result of such changes being to produce the varieties of flavor, odor, and taste by which the different kinds of teas are distinguished; and *secondly*, that the different colors of green and black teas are due to the mode in which the leaves are treated. For *green teas*, the leaves are roasted in pans almost immediately after they are gathered. After about



GATHERING THE SPRING CROP.—The leaves are plucked with great care, not more than one being detached from the stalk at a time.



DRYING.—A basket frame, wide at both ends, and contracted towards the centre, containing the tea, is placed over hot embers of charcoal.

five minutes' roasting, during which they make a cracking noise, become moist and flaccid, and give out a good deal of vapor, they are placed on the rolling-table, and rolled with the hands. They are then returned to the pans, and kept in motion by the hands; in about an hour, or rather more, they are well dried, and their color, which is a dull green, but becomes brighter afterwards, has become *fixed*. The essential part of the whole operation is now over, nothing more being required than to sift and re-fire it. For *black teas*, the leaves are allowed to be spread out in the air for some time after they are gathered; they are then further tossed about till they become flaccid; they are next roasted for a few minutes, and rolled, after which they are exposed to the air for a few hours in a soft and moist state; and lastly, they are dried slowly over charcoal fires, till the black color is fairly brought out. Hence the dark color and distinguishing flavor of black teas seem due to the long exposure to the atmosphere in the process of drying, and the oxygen of the air acting rapidly upon the juices of the leaf, and especially upon the astringent principle during this exposure. For the purpose of giving special scents to different varieties of tea, numerous odoriferous plants are employed in different parts of the tea country.

Among the tea producing countries China comes first in rank, Japan second and India which now bids fair to out rival both its oriental neighbors, although tea culture only commenced in 1836, comes third. Then follows Java, the Island of Ceylon and Brazil, in the order named, California may become a tea producing state, but the great difficulty it will have to contend against will be the labor.

Tea may be considered to rank foremost of all beverages. From numerous experiments, it appears the introduction into the stomach of a small quantity of theine (such as three or four grains which is the quantity contained in about one-third of an ounce of good tea), has a remarkable effect of diminishing the daily waste or the disintegration of the bodily tissue, thus if the waste be lessened the necessity for food to repair the waste will obviously

be diminished in an equal proportion. "In other words" says Prof. Johnston, "by the consumption of a certain quantity of tea the health and strength of the body will be maintained in an equal degree upon a smaller quantity of food. Tea therefore saves food—stands to a large extent in the place of food—while at the same time it soothes the body and enlivens the mind."

Analysis. On submitting the ordinary commercial tea to analysis, we find that it contains (1) a volatile or essential oil; (2) theine or caffeine; (3) a nitrogenous compound analogous to caseine; (4) a modification of tannin; besides gum, sugar, starch, fat, woody fibre, salts, &c. *The volatile oil* gives to tea its peculiar aroma and flavor. The proportion in which it exists is, according to Miller, about 0.79 per cent. in green, and 0.6 per cent. in black tea. It may be obtained by distilling the tea with water, and is found to exert a most powerfully stimulating and intoxicating effect. In China, tea is seldom used till it is a year old, on account of the well-known intoxicating effects of new tea, due probably to the larger proportion of essential oil which it usually contains. The headache and giddiness of which tea-tasters complain, and the attacks of paralysis to which, after a few years, persons employed in packing tea are found to be liable, are due to the action of this oil, which, according to Johnston, 'does not exist in the natural leaf, but is produced during the process of drying and roasting.'—*Chemistry of Common Life*, 1855, vol. 1, p. 170.

Green Tea. In noticing green teas of all kinds, we may say that some time ago the government of Great Britain passed a law prohibiting the importation of all faced green tea, which made this country and Canada almost the only outlet for all the concoctions it was possible for John Chinaman and even worse than he his neighbors the Japanese, to manipulate. Faced tea is very easily detected by experts, it being of a blueish caste and when drawn (see Tea Testing) has a collection of scum of the same color on the top of the liquor.

Young Hyson is divided into two distinct kinds, Moyune and

Ping Suey. The first usually packed in half chests the latter in boxes. Moyune does not possess the same good make and handsome regularity in leaf as Ping Suey, but is finer in flavor, drawing a rich, mellow and delicious liquor. While Ping Suey not being so fine is more stringent and coarser. Moyune, Hysons and Gunpowders are as a rule subjected to less adulteration than the rest of green teas.

Hyson is similar in character to Young Hyson, but is much larger and more irregular in the leaf. It draws a good liquor, but its appearance always tells against it when sold by itself. It does very well to mix with black teas as you get quality in the cup at lower prices.

Twankay is still a more unsightly tea than Hyson with larger yellowish badly rolled leaves, and may be ranked as among the cheapest of China and Japanese greens, although there are sometimes good parcels to be had. It is very seldom retailed alone. The infusion is of a deep yellow and of clear sharp taste. Gunpowder is a heavy tea of dark green color and the leaves are rolled in hard balls. Ping Suey for many years ruled the market being so pleasing to the eye and was at one time distinguished as No. 1 or pin head Gunpowder and so on in proportion to the size of the leaf. Adulteration and manipulation to produce this taking leaf became so extensive that it had ultimately to give way to the purer and finer flavored Moyune Gunpowder which may now be considered as the finest specimen of China Green Tea. Imperial does not possess the make of either of the foregoing, but is more flakey and open in leaf and in color a silvery green, it bears a similar relation to the above as Hyson to Young Hyson. Owing to the openness of the leaves these teas will not carry much adulteration.

Japan furnishes us with both colored and uncolored Green Tea and the former greatly out-balances the latter, indeed of late years they have been subjected to more adulteration than China teas. The Japans appear to be a long way behind in point of manipulation.

Black Teas. Oolongs are very highly dried, of wiry, brittle leaf, and valued according to degree of strength and pungency, and freedom from dust and are divided into three principal varieties deriving their names from the district of growth, viz: Formosa, Foochow and Amoy. Though ranked in this country under the head of black tea it would be more correct to grade it as a medium between the uncolored green and the black teas of China and India. The liquor bears not a few resemblances to the former uncolored greens. Formosa and Foochow rank first, the latter as a rule possessing a little more flavor while all the common grades may be classed under the head of Amoy kind. The finest is free from stalk, fine twisted leaf and of delicate flavor and full strength.

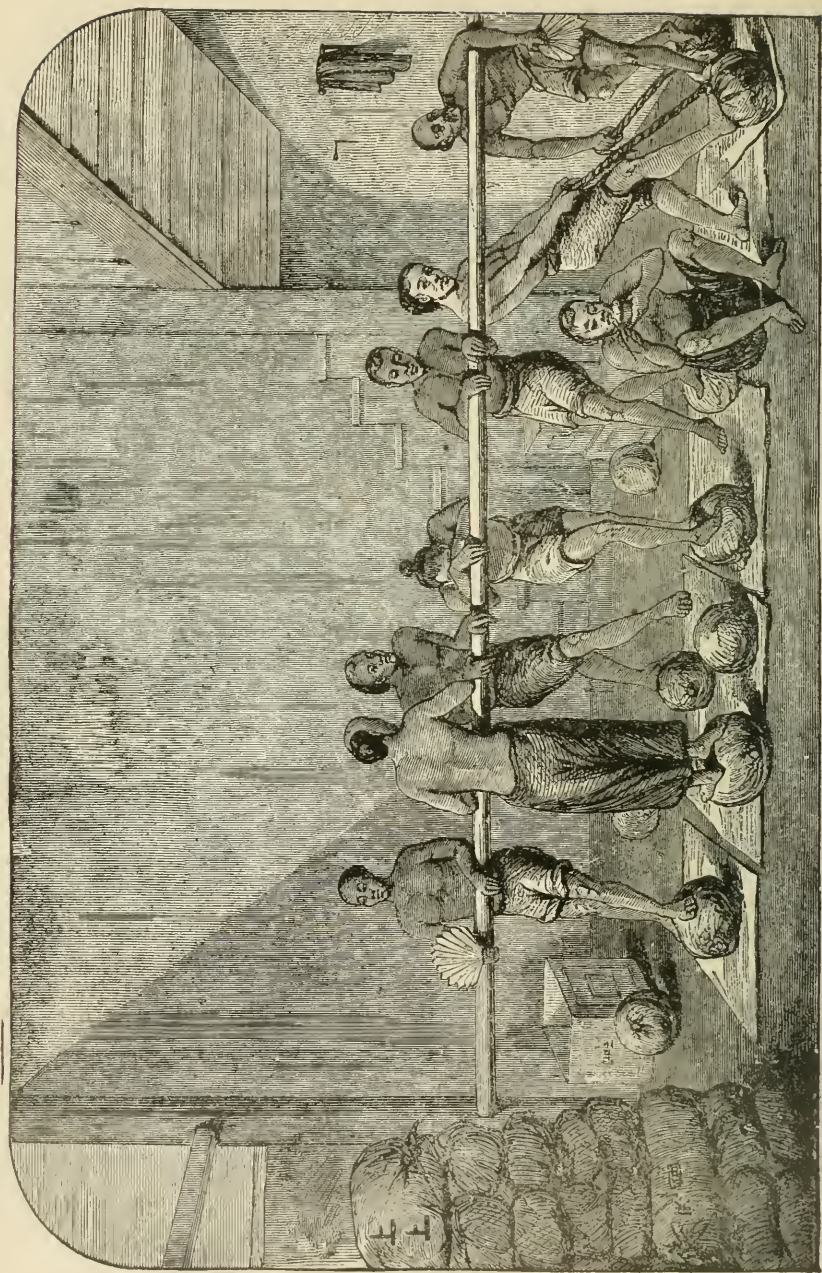
There is a growing in the American taste toward the Formosa Oolong tea of fine flavor. It seems to be the most satisfactory article where fine taste is consulted. The aroma and flavor are vastly superior to our mind to any other kind of tea unless it be an early-picked Rose-leaf Japan; but for body and strength it is far beyond any other kind. It is susceptible of reduction in strength to a larger degree than any other, without ruining the flavor. It is the only tea that gives a satisfactory second drawing.

Scented teas are divided principally under the two heads of Foochow and Canton. The former always being the highest scented, but as a rule draws a weak water. While those from Canton draw good deep liquor and are strongest and rough to the palate. They are principally consumed in the manufacturing districts of England. In all scented teas those are the best which possess an olive hue and the infused leaf of bright greenish color.

Scented Orange Pekoe is a long leaf tea well twisted some of which is termed "Spider legged," from the length of its leaves. The small leaf Orange Pekoe known as Ouchain kind draws a darker liquor than Foochow and in some cases is quite as delicate in flavor.

Scented Caper. We give a full page illustration of the mode





MAKING CAPER TEA--By rolling it in bags with the feet, after which it is scented.

of manipulation of this tea, In appearance it is much like Gunpowder, but black instead of green. In character it is similar to Pekoe possessing however a slightly different flavor. Some years ago this tea was brought in great disrepute by the mode in which much of it was made. By collecting the dust of other teas and adding gum and steel filings to it they were able to make a pretty tea to all outward appearance by facing it with black lead. But of late years anything with facing on is rigidly excluded by all dealers who know anything of the trade.

Congou, Is really the black tea of China and is commonly called English Breakfast in this country, which in reality is a misnomer as all kinds of tea are sold in Great Britain, where indeed it is rarely sold straight, always being mixed or more correctly blended differently in different parts of the country in order to please the tastes and palates of the different sections. Blending tea in England has come to be considered one of the fine arts of the trade. Congou is broadly divided under the following heads: Moning, Kaisow, Souchong, and New Make. The first of these is again divided into Ning-Chow, Oopack, Oarfa and the quality ranging about in the order here named. The second Ching-Woo, Panyongs, Saryqunes. The Ning-Chow and Ching-Woo, both Moning and Kaisow are the purest and finest teas exported from China. Souchong is a strong black tea. The leaves are large, rough and often broken. The infusion is clear golden and aromatic.

Java tea is very similar in character to some of the varieties grown in British India. With a little more care in the drying and manipulating of Java teas, the consumption must increase.

Tea Packing. A tea packing house after the busy season, says the *Foochow Herald*, presents a very different scene from that of two months before. Then, one found lines of fifteen-catty boxes waiting to be soldered up. Now, none. Next one found fat bags stacked up eight or ten feet high, bursting with Pehling tea that escaped here and there through holes temporarily stopped with bamboo leaves; the bottom of the bags mostly stained

from contact with wet flights of mountain stairs upon which the exhausted coolie had set them down on the passage.

Now, one finds but empty chests, hundreds in number, square, deep and strong, used for handling the tea in the factory. Ordinary tea chests would not stand the rough usage.

Farther on, one came to the dozen long rows of sifters facing each other, forty in a row, the mesh of some taking a pencil; that of others refusing a pencil point—sifting tea-leaf rough and bold that after a persuasive grasp or two of the hand, broke, and consented, after a few shakes of the sieve, to be stripped of some of the sappy leaf-edges and leaf-ends and to appear below, the even and uniform leaf which the tea-drinker insists he must have (*plus* the dust due to the persuading). The transformation in a rough leaf on passing the meshes of a coarse sieve, with a gentle crush from the sifter's hands, enhances a rough bold tea much in value.

In place of the rows of men then seen tiling and jerking their sieves in a monotony, only broken by the Cantonese taskmasters' roll-call twice a day, before the general meal of fish and rice, there is now to be seen only the bare floor of hardened earth, piles of empty benches stacked in a corner, and the sieves of the twelve different sizes used, each in its division in the three story stands.

The dozen or score of fanning mills are still, now. The trained hands that turned the cranks with a uniform motion, sending the heavy tea, light tea and flaky dust each down its respective spout separated never again to meet except haphazard, mixed in a White-chapel grocer's window.

The tea leaf separated in these fanning mills, has been parted with at the smart loss of Tls. 8,000 on 3,500 piculs to the foreign buyer, and he been let go to the London dealer or auction room *habitué*. The mills now stand still. The tea growers in the hills who waited through June and July for their money, have been paid. The losses to the packers here, however, have been so smart that there is little third crop tea now being packed in Foochow, and the mills will rest until another May shall bring the physical courage bred of that blood back to the pale and dispirited native

teamen. There are stacked in this huge godown a few hundred packages of the native maker's brick tea wrapped in plaited bamboo strips, bound in half bamboo and triply rattanned. Aside here, the Chinese upper millstone is being turned upon the nether by a Chinese who is grinding the tea seeds left by a fanning mill.

In these sycee-boxes, sharp spades are falling upon tea stems, chopping them fine enough to go into the stemmy, dusty mixture to which the seed-dust gives the strength, while the chopped stems vouch for it's being tea.

In the firing house, four Chinese rice kettles, two feet across the mouth, sit obliquely upon edge, turn the tea back in a shower over the hand of the stirrer, a wood fire being kept up in the brick-work underneath. Fire holes, scores in number, follow in rows the walls of the firing house, in each an iron pan placed, now filled and rounded with charcoal ready to be lit. Placed over each of these fires is a huge hour-glass shaped basket-hood or muffler that shuts in all the heat of each fire to but one outlet—that through the tea sieve that chokes the throat of each basket.

In these baskets is dried off the tea that comes in from the hills, wet or flat from constant down-pours and from the first fermentation of the leaf. These fires are out and all is still.



A CANTON TEA PICKER.

Here, too, on the floor above, the benches are empty where girls and women came—some too often—to throw out the stems from

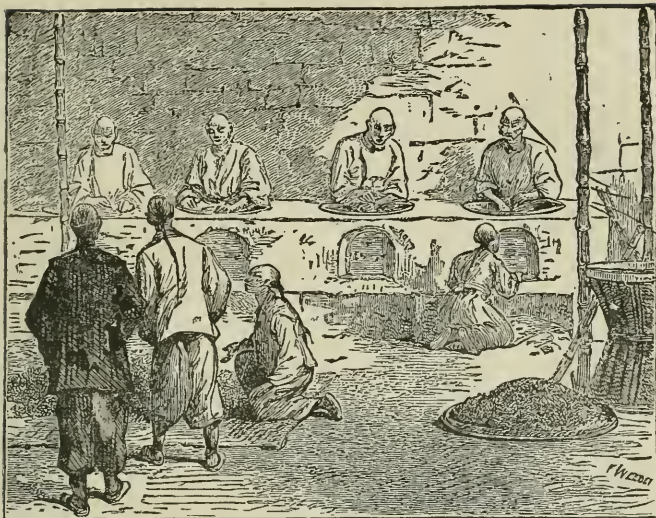
the leaf, getting half a cent for removing those from the two cat-ties of tea given them in wound bamboo-woven trays.

The floor is now bare where we then saw the Ningteh tea brought to a uniform shade, by shaking in bags with a few spoonfuls of lamp black; then barked upon the floor, only to be strewn white as a grave in spring with the pure muhli blossoms; then blossoms in turn, buried under another avalanche of funeral tea, and this again with blossoms, life upon death; then both were rudely mingled together and put away in boxes for a night till the fragrance should have been robbed by the dead tea, and the faded flowers be thrown aside, spent and worthless.

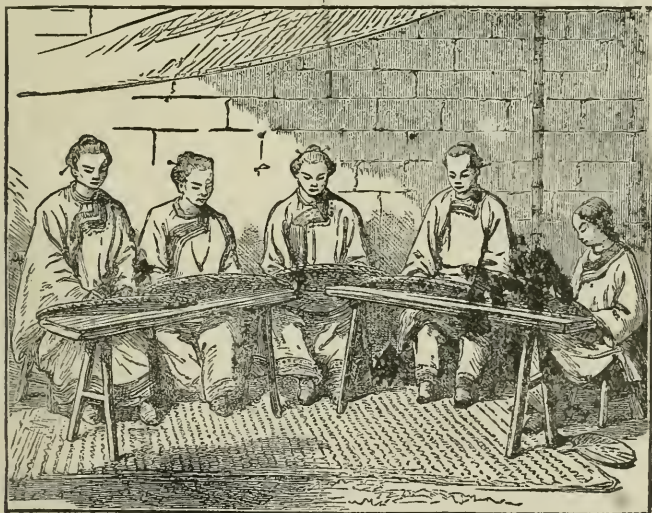
Our round finishes at the shed where Chinese lads, out of long sheets of lead, are glibly making lead cases by moulding them, hatterlike, upon a box, and then running the soldering iron along the edges. Here Chinamen in their natal costume, beside this huge four-hogshead vat of hot water, are washing off the dust and sweat of the day. Here are piles of wood for the hot tea-coppers, crates of up-river hardwood charcoal for the firing pans and firing baskets. We must leave without the sight we then had of the mad dervishdance of two Chinese, who, given a dozen pounds of tea stems under their sandals in a tray, perform about the interior periphery a double shuffle, twist and grind of the enemy under the heel, that is cooler for the spectator, the thermometer in the nineties, than for the performers from whose bodies the perspiration rolls in the tea stems below.

The box factory is elsewhere. We enter on our homeward way. It is in another old disused tea hong occupied by foreigners in the days when money was made, tumbled down now and abandoned to Chinese. Inside, a few Chinese youths, eating a dollar's worth of rice each per month, are rapidly glueing and dovetailing together, by rough wholesale strokes, boxes by the score. Few nails are used, for these are handmade and cannot be afforded. What a bungling "mending" the merchant will pay for, when these frail cases reach the land of rough usage and coarse nails.

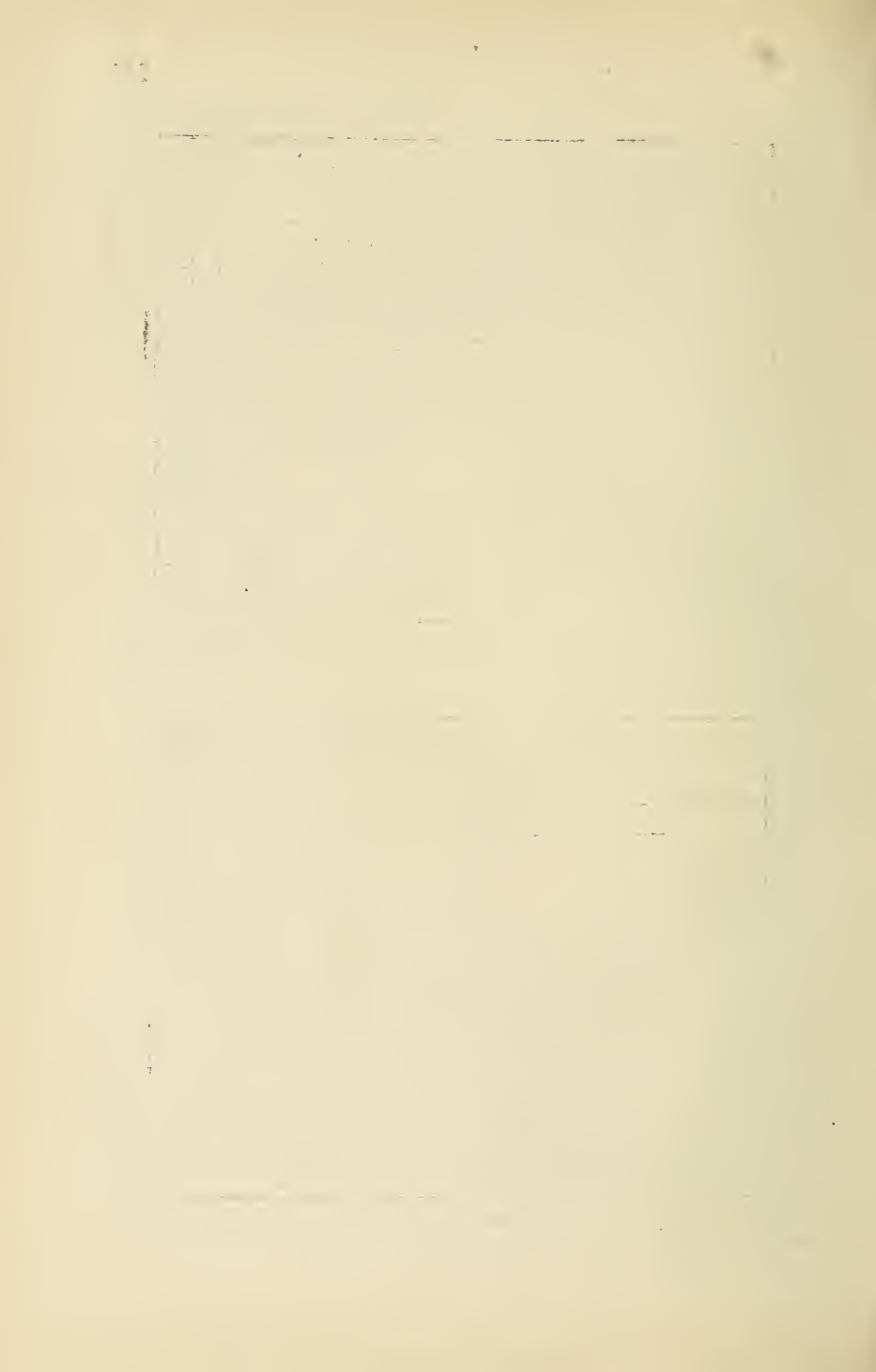
Here you see a bit of thin teawood; there is a bit of paper



FIRING AND COLORING.—When the teas are half roasted, powdered Prussian blue, plumbago, gypsum, and turmeric are added, except to that tea ordered pure and free from all mineral facing powder.



PICKING TEA.—Great care is bestowed on the finest chops of tea to sort out all defective leaves; this work requires considerable practice and application.



gaudily daubed with cardinal colors : a stroke or two ; 'side marries end, the gaudy paper cover hides all joints, and the catty boxes, gay with bird, butterfly, dragon and phoenix, are *en route* to be stared at in a provincial grocer's window.

The only foreign devices we have noted in these busy establishments, where in the season 500 men and women are busy from daylight to dark, are a Fairbanks' scales and a Canton made fire engine. Two red tapers stuck in the earth at the door, burn for good luck, and good luck we must wish the patient set who work here.

Nearly 2,000 piculs this season have passed the sieves, one might almost say a leaf at a time. And so this year of hundreds of packing houses, some in hamlets in the hills, some, as in Foo-chow, in cities ten to fifty miles from the hills. Women have car-



CARRYING.

ried, each her picul, up and down the mountain pathways, twenty-five miles a day, not complaining of their bent backs, nor once rudely jostled or insulted by "foreign coolies" from outside districts who come starving their way toward the work offering their

only food, a double handful of salt in their girdle to bite at before they drank, along the road. Boatmen at river marts have fought pitched battles for the tea, upon the transport of which depended their livelihood.

Probably all the tea leaving Foochow has been lifted up and down as much as if it had been carried up one side of the great pyramid and down the other, a score of times. Plenty of men have been ready to fight for the privilege of carrying it; plenty of women, too, under their loads, behind their new husbands.



WEIGHING.—This illustration is from a photograph, showing the manner of weighing tea, and payment of wages. The leaf is subsequently prepared by firing.

The Tea Trade has long been known as one of the most speculative in existence. It has puzzled the cleverest merchants and tea-tasters in China to make anything approaching a sure forecast as to the run of the markets, and, at the last moment, the most careful calculations are liable to be upset by some unforeseen circumstance. Tea is grown on hills in China at an elevation of 500 feet to 1500 feet above the plains. It flourishes in waste places

which will bear no other crop, and in the neighborhood of the tea plantations there are thousands of acres which could be utilized should there be any occasion to do so. The leaf of the tea-plant can be prepared according to the demand in the markets. It must not be forgotten that the vast population of China drinks tea morning, noon, and night, and that, therefore, the amount consumed by the tea-drinking population of England, Russia, Australia and the United States is but trifling compared to that drank by the natives themselves. If it suits the tea-grower to do so, he will sell his crop to be fired and kiln-dried for exportation; but if he prefers it, he can have it dried in the sun and sold for Chinese consumption; or, if the price is too low, he will not go to the trouble and expense of picking the leaf, but will let it remain on the shrub. We may conclude, therefore, that for many years to come, however much the demand for Chinese tea may increase, there is plenty of leaf always ready to meet it. This will, therefore, cause us to look for the fluctuations of the trade to other causes than the extent of the crop. London merchants, brokers, and dealers interested in tea, have, time after time, insisted on the necessity of not being in a hurry to open the market, while tea merchants in China complain of the rush to sell in London directly the tea arrives. It may be possible to hold over the tea in London, but it is not so in Hankow. The tea market there has been compared to a cattle-fair, where the farmers, having brought their beasts for sale, must dispose of them, while those of the buyers who can act with the promptest decision will make the best bargains. Besides, the Russian merchants will buy the best chops, no matter what price they have to pay for them, and if the English merchant wants really good tea, he must pay a high price, and that, too, without delay, or see it fall into his rivals' hands. Tea, on its arrival, is stored on the up-country junks, which lie at the mouth of the river Han, and are at the mercy of the winds, of the freshets that occur in the spring, and of fire. As the tea is sold it is moved into godowns, to be weighed, marked and matted, and then shipped. It is, therefore, evident that the tea-men must sell with as little delay as possible.—*London Grocer.*

Indian Teas. In the year 1836 the first experiment of growing tea in British India was made. For many years the enterprise was very unprofitable, but may now be pronounced a success. After supplying the wants of India there will be available for export not less than 50,000,000 pounds for the year 1882. Some of this must find its way to this country and our dealers will eventually handle it.

Broadly speaking India teas are divided under three headings, Pekoe, Pekoe Souchong, and Congou. The first mentioned is the finest being perfect in the leaf, absolutely pure and of fine rich flavor, and full body. The rich Pekoe tips add considerably to its appearance. This class of tea is extensively used in Ireland. Pekoe Souchong is not nearly as well made a tea, being larger in leaf and altogether rougher in appearance. In the cup there is not so much difference. Some parcels will draw a remarkably fine liquor both for strength and flavor. Congou does not form any large extent of the production in India and comes nearer in character, but not in appearance to the Congou of China.

One great important feature in Indian teas is their perfect purity. None of those artificial means used both in China and Japan to give color, strength and flavor are used in their manipulation nor are they put through the same mode of drying and curing. They rely entirely upon their natural strength and flavor for their popularity. Not being subjected to artificial flavoring, their differences though perhaps greater in variety are neither so distinct in flavor or character. The varieties are entirely dependent on the different peculiarities of climate and soil, no two gardens bearing the same quality or character; this accounts for the comparatively small parcels of Indian teas compared with those of China and Japan; indeed the varieties are so numerous that to attempt to group them under heads similar to China teas would be unjust both to the tea and the dealer.

The distinct varieties of the tea receive their names from the district where they are grown; thus for some years the cultivation in India was confined to the province of Assam, and now the

general name by which all India tea is known in England is Assam. The Assam Tea Co., were the pioneers in the cultivation of tea in India. Tea bearing this company's brand is greatly sought after on the London market and high prices are usually obtained for them, but the quality does not always justify the price paid.

Darjeeling district teas owing to their fine flavor and universally good appearance hold a position of the first rank. They are in some characteristics similar to the finest Moning Congou of China, possessing a fine rich full flavor and deep liquor; the finest parcels of flowery Pekoe may be considered among the most desirable parcels, being almost perfect in leaf.

Cachar district tea possesses as a rule a slight malty flavor; which is by no means confined to teas grown in this district, they are scarcely so thick and strong in liquor as those mentioned before. The character of this tea as well as that grown in the Kangra Valley may meet with favor among a certain class of tea drinkers in this country.

There are many other districts such as Chittagong, Dehra Doon, &c., from which we shall receive some supplies, but it would be of no service to go further into the peculiarities as their principal characteristics are so similar to those already given.

Broken leaf is a term used in connection with India teas for what in China and Japan teas is known under the head of Siftings or Dust—but it in no way resembles the article shipped from those countries. The greater care bestowed in gathering and picking of India teas over those of other countries, is shown in their siftings; some parcels realizing quite a high price. They are usually used for blending always drawing a deep, thick liquor.

One great objection to India teas on the part of the retail trade is the size and ugliness of the packages. A retail dealer usually makes a point to ornament his store with the packages from China and Japan, and it will be essential to the success of India teas to pack them in handy and at the same time appropriately decorated packages. It may add slightly to the cost, but will abundantly repay the outlay.

Testing Tea. A balance like one usually used by druggists is required which will cost about \$5, then a dozen small china pots of equal size. Weigh the amount of a ten cent piece in each and pour boiling water over it and when sufficiently cool, proceed to taste. It is impossible to give any further definite information as nothing but constant application with a fine palate to commence with, will ever make a successful tea taster.

Tea Caddies are made in this country in imitation of original packages which come from China and Japan. They are shipped in nests, the smaller sizes fitting into the larger ones so that they occupy very little room, and give a wide variety of sizes in each nest.

Til Tea. A kind of flat Brick Tea made in China, exported by way of Keachti, where it is sold to the Armenians and Tartars, who distribute it through Siberia. It is prepared in a different manner from common tea, being stewed with milk, butter, salt and herbs, it then constitutes an article of diet rather than a beverage.

Brick Tea. (See under B.)

THYME. A very common plant in Europe and largely cultivated for its fragrance and used for seasoning soups and other dishes. No species of thyme is indigenous to America. It is gathered and dried in the fall, and has an agreeable, strong and penetrating odor.

TIERCE. Is a cask containing in liquid measure about forty-two gallons, its name indicating that it is one-third of a pipe which holds about one hundred and twenty gallons. The term is now applied to any cask of a relation size, as a tierce of lard, of hams, or of rice, without regard to the actual measure of its contents.

TIN CANS. The cost of tin packages has been reduced very much by the introduction of machinery in their manufacture, and dealers often pack goods for their own convenience. Syrups in gallons and quart cans, neatly labelled; and many other articles

of the same sort, make convenient and saleable packages and are good advertisements for the enterprising dealer who puts them up.

TOBACCO. The dried leaves of this plant are now almost universally used as a luxury in all parts of the globe. First used by the American Indians, and carried to Europe as a curiosity by the early discoverers of our continent, it is now cultivated in every quarter of the globe where the climate is mild enough to permit it.

To the grocer tobacco presents itself in two phases—as an article on which a good profit can be made—and as drawing and pleasing a profitable class of customers. It is always a mistake for the grocer to put too high a profit on cigars and tobacco. He should be content with about twenty to twenty-five per cent., and by careful purchasing and moderate selling prices give his customers as full value for their money as any cigar dealer will. The purchase of cigars is not a household expense, but it often falls to the lot of the housekeeper to supply the evening company or to please the returning gentlemen with a thoughtful preparation. As the purchase of cigars, especially in a city grocer's store is an unusual item no effort should be made to supply cheap stock. The best cigars at fair prices will help the grocer while any attempt to supply the lower grades will attract undesirable custom and drive away the better class.

Tobacco as manufactured may be classed under three heads, smoking, chewing, and snuff. The first is again divided into cigars, and loose smoking tobacco, and chewing into fine cut and plug.

Cigare consist of tobacco leaves rolled into convenient form for smoking. They are made both by hand and by machinery. Their interior consists of loose pieces and as the wrapper covers the whole, a sample cigar should be cut open when purchasing quantities. If the interior is composed of trashy scraps, or of stalks the quality is of course very low. Havana cigars both on account of their quality and their make have long held the highest reputation, and from the Spanish market we borrow all our terms for

designating the various styles. *Maduro*, means dark—*Colorado Claro* means light colored. *Conchas* are short, *Regalias* long and larger, and *Partagas* long and slender. Plantation cigars are coarser makes from the country districts.

Loose Smoking Tobacco is generally sold in eighth, quarter, and half-pound muslin bags and varies very much in quality. The *Durham* brand of Wm. Blackwell and Co., leads the world in quality.

Chewing Tobacco was generally used in a fine cut form and every effort was made to render it attractive, but of late years plug tobacco has almost supplanted it.

The *Chicago Leaf* says: One among the most marked causes for this is that, the attention of leading manufacturers and dealers has of late been given to this preparation of the very finest and delicious plug for the trade and consumers. They have sought out the choicest material, and through their genius, have made such combinations as to make an entirely different article from those formerly known as plug. The plug tobaccos of ten years ago, and those of to-day are totally unlike and could be hardly called by the same terms. The improvement has been marvellous in plug tobacco.

In the manufacture of Plug Tobacco, the first factory process is that of stemming. It is then taken into another building, where, at the top story, the apparatus is placed for sweetening, spicing, etc., consisting of large copper kettles containing syrup in one, granulated sugar and water in another, while a third one has a sweetened syrup, which has within it cloves, allspice, and various other spices of aromatic nature which are used for different grades of tobacco. Another tank has a solution of licorice and water, and various ingredients such as are necessary to give the proper taste and color to the tobacco. The tobacco is here taken, after having been stemmed and dipped into the solutions, which may contain one, two, or more of the various ingredients in use, according to what the tobacco is to be when finished. This solution is hot. After having been dipped it is passed through a pair of

squeeze rolls, which allow only a certain amount of solution to be held by the leaf. This is process No. 2, and is what is technically called sweetening. It is then taken from the rolls, put in large baskets and run into the dry-rooms, which are fitted up with a large number of steam pipes. The tobacco is hung in such a way that the air may have free circulation about it, and it is here completely possible. This is process No. 3, or drying out.

It is then taken to what is called the job room, where the flavoring is put on it, and it is put in proper condition for stamping. Here great care must be exercised to prevent its getting too moist or too dry, and as tobacco is such an absorbent of moisture, it oftentimes occurs that one department of the factory will be entirely stopped because the tobacco in another is too moist, by reason, perhaps, of a change in the weather. The tobacco in this room having been put in proper condition, which is process No. 4, it is then taken to another room, which is called the "lump room;" there it is shaped and a wrapper put about the bundle, when it is ready to go to the formers. This shaping and wrapping requires a good deal of dexterity, as well as experience. The tobacco here, after being wrapped by the man at the bench, passes over to another bench, where the inspectors are working. These men are so accurate in this, that nine times out of ten, by taking the bundles in their hand, they will discover a difference of one quarter of an ounce, and throw the package back for the man to put in more or whittle off some, so that each plug may have the same weight, whether it be ones, twos, threes, fives or sevens to the pound. In this room, what is to make a plug of tobacco looks like a small bundle of clothes wrapped in a leaf of tobacco; it has something of the shape, but very little of the appearance of a compressed plug or head of tobacco.

After having been examined and weighed, which is process No. 5, it is taken to the lower floor, where it is prized, which is the finishing pressure that gives the smooth shape and uniform color. It is now in uniform sized lumps ready for the packing boxes.

The cultivation of T. is comparatively easy, and although a

warm climate suits it best, it is without much difficulty raised in most parts of Europe. The usual plan in the great tobacco-producing countries is to sow the seed in seed-beds of rich soil, and as the seed is extremely minute, it is first mixed largely with sand or wood-ashes, to assist in spreading it thinly. In Virginia, which may be taken as one of the best tobacco-growing districts, this is usually done in the first week in January. After the seed-beds have been carefully prepared and sown, small branches of trees are laid over, to protect the seed, when it germinates, from the effects of frost; but these are removed as soon as can be done with safety, and the plants then grow rapidly, and are ready for transplanting into the fields about the beginning of June. The land in the fields is very carefully prepared, and small hillocks are raised up in rows; each is about a foot in diameter, and flattened at the top. With the first appearance of rain, the plants are carefully raised from the seed-beds, and carried usually by children, who deposit one on each hillock, on which it is carefully planted by experienced men, who follow after the children. Only wet weather will do for planting, so that this operation often lasts until the end of July. When planted, the tobacco-crop requires much careful attention to weeding, and a watchful eye to prevent the ravages of various insect enemies. Much of this latter work is done by flocks of turkeys, kept on purpose by the planters. As soon as the plants begin to throw up the flower-shoot, it is nipped off; otherwise it would weaken the leaves; but this process is neglected in some countries, especially in Turkey and Greece, where small leaves are preferred, and where, in some cases, as in the celebrated Latakia tobacco, both leaves, buds, and flowers are used. The time generally chosen for cutting it is mid-day, or when the sun is powerful, and the morning and evening dews absent. The cutting is done by hand, and only such plants are chosen as are ready, which is known by a clammy exudation which forms over the leaf, often giving it a spotted appearance. If the plants are very large, the stalk is often split down, to facilitate the drying. They are then removed from the field to the tobacco-

house, around which are erected light scaffolds, to which the plants are suspended, generally by passing a thin stick through a split in the stalk of each, and so placing a number of plants on each stick, just near enough to prevent them touching each other. After some time hanging in the open air, the plants on the sticks are removed, and suspended in a similar way inside the curing-house, until the drying is completed. The leaves are next removed from the stalks, and all bad ones rejected. The chosen ones are tied up in bundles called hanks, and these are packed in hogsheads, enormous pressure being applied in the packing. These hogsheads are very large casks, which must not contain less than 950 lbs. net in the United States, where the government exercises a very strict surveillance over the weight and quality of all tobacco grown and cured there. Within the last ten years, a large tobacco-export has been carried on by Paraguay. The quality, though not equal to that grown in the United States, is, however, fair, and has been steadily improving. It is always packed in linen bales. Turkey has also, for several years past, been steadily increasing her exports of tobacco to Great Britain. The quality of Turkish tobacco is very peculiar: it is small in the leaf, and of a light color—either a bright yellow, a yellowish green, or a yellowish brown. Being extremely mild, it is a favourite with many smokers.

The whole matter of the use of tobacco is very fairly summed up by Dr. Richardson in an excellent pamphlet. “Before the full maturity of the system is attained, even the smallest amount of smoking is hurtful; subsequently, the habit is, in most instances, only prejudicial when it is carried to excess. We cannot honestly say more against tobacco than can be urged against any other luxury, it is the least injurious. ‘It is innocuous as compared with alcohol; it does infinitely less harm than opium; it is in no sense worse than tea; and by the side of high living altogether, it contrasts most favourably.’”

TOLU, a balsam or gum gathered from a tree growing in tropical South America. It has a fragrant odor, is of a pale brown

color, and dissolves readily in spirits. Its use in the well-advertised "Tolu-Rock and Rye," brings it prominently before the trade

TOMATO, an animal plant of the "nightshade" family, the fruit of which was for a long time not generally considered fit for food.

The origin of the tomato has not been positively ascertained though there is reason to believe that it was first found in South America, and that it was cultivated centuries ago in Mexico and Peru. Several varieties were known in England toward the close of the 16th century and Gerard, the surgeon and botanist, speaks of it, we think, in his "History of Plants," having himself introduced it into the Kingdom as an exotic. Dodoens, the Netherlands herbalist, mentions the tomato as early as 1583 as a vegetable to be eaten with pepper, salt and oil. It was used in cooking by the Malays more than a century and a half since. It is extensively raised in Southern Italy, and employed there as an accompaniment to nearly every dish, particularly macaroni. But neither there nor anywhere else in Europe is it as commonly eaten as it is here separately and in quantities. In England it is sparingly produced, requiring a hotbed in the spring, and consequently high priced. The Italians formerly called it golden apple, and now call it love apple, as it was once designated in this country. The appearance of the tomato on the table has greatly increased in Europe within a few years, but in no land is it a regular dish much as it is used as a sauce abroad—as in the United States.

They ripen in July and August in the United States, but are brought from the West Indies in May and June. They are used in many forms, entering largely into the making of sauces, soups, and mixed pickles. Immense quantities are preserved in cans, and the consumption of the fruit in this form is rapidly extending over Great Britain and Europe.

Dr. Bennett says "that when used as an article of diet, it is almost a sovereign remedy for dyspepsia and indigestion. Either cooked, raw, or in the form of catsup it is a most healthy article of food."

Canning. The tomatoes first undergo a scalding process, before being taken into the factory in wooden pails. Here they are handed to women for paring. The women and girls are seated around tables, and at five cents a pail they can earn fair wages. The tomatoes are next inspected to detect any unpeeled tomatoes. Then they are passed through a funnel-shaped machine into the cans, after having been cut in the passage. The contents of the cans are slightly compressed and a portion of the juice poured off. The top of the can is then quickly soldered on by a workman, who uses a heavy iron, heated by gasoline for the purpose, or by an apparatus called a capping machine. The canned tomatoes are now loaded on trays, and conveyed to the "bath" room, where they are placed in vats of water heated by steam, and slowly cooked. After this they are allowed to cool, carried to the storehouse and labelled.

TONGUE is undoubtedly the most delicate and tenderest meat used for food. Choose those with plenty of fat on the underside thick and firm. Tongues are extensively canned, and are in many of the best brands quite as good as when bought and cooked fresh. "Lunch tongues" are generally pig tongues canned in Western markets. "Compressed" tongue is, as its name indicates, subjected to pressure before canning, or during that process. Dealers should never sell a can of tongue, or of any meat or fish during warm weather without reminding the buyer to cool it thoroughly before cutting it open.

TONQUA BEANS are grown in South America. They are aromatic in their odor and strong in taste. Their use in perfuming snuff and in scenting clothes at the same time preserving them from moths is well-known.

TRADING. See *Barter*.

TREACLE. See *Sugar*.

TRICHINÆ, are small parasites or worms which are found in pork, and which after entering the human system breed rapidly and pass directly through the walls of the intestines and bury themselves in the muscles of the sufferer. The young are barely

visible to the naked eye. They can exist in extraordinary numbers in the smallest compass. Twenty millions of them have been estimated as existing in one diseased person.

This parasite is far more common among Germans than any other classes, probably because of their habit of eating smoke-dried sausage and other preparations of pork which are only partly cooked. Thoroughly salted meats are said to be free from them, and careful and complete cooking is a good general preventive, but on this point considerable variety of opinion exists.

It is commonly believed that ordinary cooking will destroy trichinæ and render infested meat innocuous. Without doubt, says the London *Lancet*, as has been stated in the daily press, "the encapsuled parasites cannot survive a certain elevation of temperature, and death renders them harmless." It is, however, hardly correct to say that a "complete means of protection is furnished by the heat incidental to cookery?" Considerable doubt is thrown on this statement by M. Vacher, of Paris, whose authority is of considerable weight. He affirms that the protection given by cooking is quite illusory, and that in the thorough cooking of an ordinary joint of meat the temperature in the centre is not sufficient to insure the destruction of the parasite. He took a leg of pork of moderate size and boiled it thoroughly. A thermometer placed within it at a depth of two inches and a half registered, after half an hour's boiling, 86 degrees Fahr., after boiling for an hour, 218 degrees, after an hour and a half, 149 degrees, and after two hours and a half, when the joint was thoroughly cooked, 165 degrees. This temperature M. Vacher maintains is insufficient, and we must remember that at the centre, which is still further from the surface than the bulb of the thermometer was placed, the temperature would not be so high. "Trichinæ would escape almost entirely the action of boiling water" in cooking.

TRIPE, an article of food prepared by well cleansing the fatty lining of the stomach of the cow or ox, and boiling it. It is very digestible and of agreeable flavor. When dark or thin the

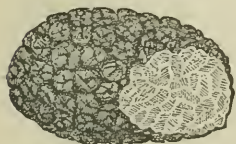
quality is certain to be poor. Its most usual form is that of Pickled Tripe.

TROUT, a species of salmon. It is a voracious fish, and the brook trout affords great sport to the angler who fishes with a fly. The lake trout is not so gamey a fish, and often attains a weight of 50 to 60 lbs.

TRUCK, a term applied to a low barrow and also to a low dray. Grocers will find the lately constructed barreltrucks very convenient for moving their goods about the premises.

TRUCK, a term used in the Middle States to designate all vegetables and fruits. A truck farm meaning one on which garden vegetables or fruits are raised.

TRUFFLE is a fungi; the specie is not grown here, but is generally diffused in temperate parts of the World. On account of its agreeable flavor various dishes are made from it. It grows underneath the ground, and is usually detached by dogs trained for the purpose. It is common in Central and Southern Europe. In some parts of France, pigs are also used to scent out the spot where they grow, as they are entirely under ground, often buried over twelve inches.



TUBS. See Pails.

TUNNY FISH. This representative of the scomberidæ family is found both in Europe and America. In the former frequenting the Mediterranean, the coasts of Spain, Italy and Sardinia, and occasionally the Atlantic Ocean. In America it is met with all along the New York coasts and thence northwards to Nova Scotia. The Tunny is a very large fish, often measuring 12 feet in length and weighing 1000 pounds or more. Its form is thicker than the mackerel's, with a crescent-forked-shaped tail. It is generally caught in nets arranged in a funnel-like form, the fish entering the wide mouth of the funnel and being gradually driven to the narrow end and killed by lances and harpoons. This fish is nearly pearly black above, with silvery sides and white be-

low. Its flesh is considered a delicacy. It yields a considerable quantity of oil, twenty gallons being sometimes obtained from a single fish by boiling the head and belly.

TURMERIC appears in commerce in the form of dried roots, or as a powder. It is used as a condiment with many kinds of food, and is the principal ingredient in every powder. It is also used for mixing with mustard and other spices.

TURNIP is the root of a plant native to Europe and Asia; it varies from the size of an orange to forty pounds in weight. It is not very nutritious, containing nearly 90 per cent. of water which renders it unpopular as an article of food though it is often taken with other vegetables and used in soups. The season commences about June. It is mainly cultivated as a winter food for cattle.

TURTLE A marine reptile much esteemed for its meat. It is used in the form of steaks, stews, soups, &c. The Green Turtle leads all other varieties in the market, and is often dried in the West Indies and sold in our markets in that state, being almost as good as fresh turtle and much lower in price. Terrapins or "snappers," a small variety of turtle are much used in soups, and canned Green Turtle and Terrapin soups are now for sale in leading stores.

TWINE. (*See Rope.*)

ULLAGE, so much of a cask or other package of liquids as it may want of being full—i. e. the vacant portion of a cask above the liquid which it contains.

VALENCIAS. Raisins prepared by dipping the bunches of grapes into a hot lye, made of wood ashes, oil and lime, and then drying them in the sun. They are used for pastry, whilst the muscats, dried on the vine, are the class generally eaten uncooked for dessert.

VALUATIONS. (*See Assets.*)

VANILLA. It is proposed to trace here the production of the flavoring substance known as "Vanilla," and to show at what cost

the caprice of man in adding a single flavor to the variety of his viands is gratified.

The vanilla plant is found native in Mexico, South America and the West Indies; but it is only in the wild valleys near the eastern coast of the first mentioned country that the vanilla bean is found possessing the characteristics which make it valuable for the use of man. In the other countries it attains no perfection, and is practically worthless. The vanilla is an orchid, and is cultivated rudely by the Mexican Indians, and by them brought into the seaports and marketed; very largely in Vera Cruz. In the great valley of Mazatlan—a depression of more than 6000 feet in its immediate surroundings, where every manifestation of nature is on a grand scale, in this valley vanilla flourishes in a wild state, and here the supply of that flavoring for the chocolate of Montezuma was obtained, and the region round about is the vanilla centre of the world.

The wild bean, wherever found, is gathered for purposes of perfumery, is of no account for flavoring, and brings in its natural state only about 50 or 60 cents per pound.

The Indians cultivate it by tying the plant to a scrub oak, when, being an orchid, it vegetates upon the air. For the first four years of its life it bears no fruit, and after that continues in bearing until fifteen years old. The blossoms are in clusters, somewhat resembling lilacs, but white in color and of the most powerful perfume, similar to tube roses. The green fruit, or beans, depend from a stock, clustered like bananas, which they nearly resemble in size, and every way, while the fruit is green. It is gathered when not quite ripe, but before the harvesting the beans have diminished to two or three on a stock. These green beans when gathered weigh from sixty to seventy-five pounds per 1000 (they are handled and sold by the thousand), but dwindle in the process of curing, so that their weight finally is from ten to fourteen pounds per 1000, and shrink from an inch, or rarely two inches, in circumference to an attenuated pod not much larger than a pipe stem.

To cure properly requires about ninety days' time, and the manipulation is almost infinite, each bean being handled critically from three hundred to five hundred times in the process by the Indians. The green beans as gathered are disposed of in layers, first a layer of beans, and then a blanket, and so on, till a pile is formed of alternate layers of beans and of blankets. This is called the sweating process, and during its continuance the piles are turned two or three times a day, until most of the water has been "sweated" out. This process is followed by drying in the sun, and here the natives exercise the utmost care and attention. When finished the beans are to be the color of a very dark cigar. The attendant picks up each bean occasionally, examines its length upon both sides, and, if he observes that one end or any part of the pod is coloring more rapidly than another, he twists a bit of leaf around the spot or section until the action of the sun shall have affected all alike. When the process is finished the beans are tied in bundles of 40, and then packed in cans containing 50 bundles, or 2000 beans each. In this form commerce finds the article. Vanilla is now worth about \$18 per pound, or not far from \$250 to \$275 per 1000 beans.

Twenty years ago the entire crop of beans cultivated and marketed amounted to from 500,000 to 700,000 yearly, and the prices received ranged from \$2.50 to \$3.00 per pound. Now the annual production is 5,000,000, and the present price from \$15 to \$18 per pound. The crop is somewhat uncertain and variable, and cannot be depended upon as unfailing, vanilla, in common with every other vegetable production known, sharing chances of failure. It is the most perplexing of all products to deal with, being so easily liable to injury. It is kept in vaults prepared for the purpose, but these must not be below the surface of the ground, otherwise the bean will become mouldy and spoiled by moisture; neither will it answer to store it in upper chambers, for in that case a sort of dry rot will attack it. It must be watched and tended like a baby.

France, always a patron of special crops and industries, some

time since encouraged the cultivation of vanilla in Mauritius, where it was believed the characteristics of soil and climate were completely favorable to its development. Plants were imported from Papantla, and the undertaking was successfully inaugurated. All orchids thrive in Mauritius, and it was hoped that this likewise would flourish there. The result was, the article known to commerce as the Bourbon bean, extensively used in England and to some extent in France; a product much inferior to the Mexican, and afforded at about half the price. Menier, the world-renowned manufacturer of chocolate goods, will not allow Bourbon vanilla upon his premises. The product is degenerating from year to year in Mauritius, and no research or efforts have thus far been effectual to prevent this result.

Strange as it may seem, it is yet true that thousands of people really believe vanilla to be a product of the tonka, or "snuff bean," and multitudes use a flavoring extract made from this article sold to them under the name of vanilla. The tonka bean can be purchased at its best for about 50 cents per pound, and its pungent, sickening flavor is no more to be compared with the true vanilla than a rose with a burdock. It is the tonka bean which certain Jew peddlers, standing upon the highways and at the corners of streets, display for sale; and they are not at all averse to their customers fooling themselves with the idea that they are purchasing vanilla, if so inclined. In the shops a preparation of tonka beans in balsam of Peru is generally sold as good extract of vanilla, which it resembles about as stated above. This preparation is nauseating if taken in quantities which would not at all be excessive use of vanilla; but, with the amount generally used in the preparation of foods, it is not dangerous to health, only intensely disgusting to one who knows the true vanilla flavor and attributes.

The French confectioners, both in this country and at home, use the bean instead of the extract in their preparations. They tie the bean in a bag, and immerse it in a boiling pot, as a housewife does her bag of bluing. Sometimes they vary the process by

grinding the beans. Unquestionably, however, good extracts are preferable, as they are certainly in most general use in the best cooking establishments of the country.

In Germany an article imitative of vanilla, and called "vanil-lan," has been produced from the common hemlock tree; but, as it takes nearly a whole forest to make a very small quantity of the extract, it has not answered expectations, which at one time extended to its revolutionizing the whole business. Its production must always be limited on account of the great expense attending it.—*N. E. Grocer.*

VARNISH. We find in the *Providence Journal* some interesting information in reference to the origin, constituents, and sources of varnish and its uses. The best varnish is made from gum copal. The name is derived from the Mexican *copalli*. The tree from which this gum is obtained is found in Mexico, Africa, Brazil, New Zealand, India, and the East Indies. Zanzibar is the great market for gum copal, and from that place it finds its way to all parts of the world. The gum resembles amber. The fresh gum from the trees is not the true gum copal of commerce. The gum that exuded from trees a thousand years since, and has since remained buried in the earth, is the desirable and valuable agent known to commerce. It is a fossilized gum, and the trees from which it came disappeared a thousand or more years ago. The natives find this gum by probing the earth with some sharp-pointed instrument made for the purpose. Experts can tell when they touch gum or some other substance, and are thus saved the trouble of digging for something useless. To the manner of digging, and to the scarcity of the gum, is due the small importations. In the making of varnish, copal gum is the chief ingredient, and linseed oil and turpentine are the other ingredients. The linseed is compressed, the oil extracted and bleached. Turpentine is made from the gum of the long-leaf pine. Georgia produces the best turpentine. The tree is squared on two sides from eight to ten feet from the ground up. As the sap rises it runs out upon these blazed surfaces and congeals. It is then scraped off and

distilled. The residue is rosin. To unite these elements into varnish requires elaborate apparatus to melt the copal gum, and great skill in the entire manufacture. The average price of gum copal is \$216 per ton, and the shipments from Auckland every year amount to more than 5,000 tons. It is said that the shipments of gum in the last 25 years have amounted to more than the trees now growing in New Zealand could supply in 10,000 years. Gum copal is used by enamellers of jewelry, and to a small extent for ornaments similar to those made from amber. Varnish not only brightens but preserves. The bare wood is varnished even on some out-door contrivances. It is a transparent enamel that takes the place and serves the purpose better than glass.

VEGETABLES. Retailers who handle vegetables are sometimes termed "green grocers." It requires considerable activity and common sense to handle green stock, and a grocer who is not ready to do it thoroughly, had better stick to staple goods. Fruit and vegetables pay good profits to those who handle them judiciously, but are equally ruinous to careless or lazy dealers. To have the earliest supplies in the market as soon as Bermuda or Florida sends them in is an important thing. To have the best, even if a good round price is necessary is equally so—leave trash lots or dead-ripe stock for hucksters and jelly-makers, and keep nothing but sound, handsome fruits and first-class vegetables. The stock should always be lighter than the demand, in which it differs from the balance of the grocers' stock. Late enquiries for perishable goods are better unfilled than prepared for, since it would mean in most cases that the grocer carries some of the stock when he closes, and this will rarely be presentable on the following day. Fruits and light vegetables should be sold and eaten on the day on which they are marketed, and should be closed out as far as possible in the forenoon. A large ice chest, well divided off, is a desirable aid to the handling of many fruits and berries, and will pay the dealer well. Grocers near Philadelphia will find it a fine market in which to purchase early vegetables, and can have their orders promptly supplied by such houses as

Christy & Rittenhouse, of Dock Street, while the whole United States can rely on Warner & Merritt for supplies of foreign fruits. In both these lines our city has decided advantages.

VEGETABLES, Evaporated. See Alden Dried Fruits.

VERMICELLI. See Macaroni.

VINEGAR is a liquid variously produced and containing as high as five per cent. of acetic acid. The vinegar of this country was formerly produced almost entirely from apple cider. The main supply of Great Britain is from malt, and that of the Continent of Europe from light wines which have soured, and are unfit to drink. Many methods are resorted to, to manufacture vinegar in the cheapest manner, and it is even produced by mixing molasses and water, and pouring them over shavings of beech or red oak wood and exposing the mixture to the air until it becomes acid. Sulphuric acid diluted with water, and compounds containing nitre or muriatic acid, are very common. Vinegar is much used in pickling, sauces, catsups, etc., and during the salad season the grocer should have an excellent article on hand. Mott's cider vinegar is a standard and reliable article produced from their own orchards at Bouckville, N. Y.

WAGON, one of the grocer's indispensable aids, and if poor in material or make, one of his greatest troubles. Jacob Rech, Eighth and Girard avenue, Philadelphia, is a leading maker of first-class wagons, and Geo. W. Moore, of Shoemakertown, Pa., makes many of the best grocers' wagons for our city dealers.

WALNUT, (THE) is the nut-fruit of a large tree found on both sides of the Atlantic, but the species known as English Walnuts are superior as a fruit both in quality and convenience to the American Black Walnut, having an easily divided smooth shell, and very loosely contained meat, while the black Walnut is a rough, strong-shelled nut, and retains its contents in a way which requires nut pickers to extract it. The green nuts gathered before the inner shell hardens are pickled, very generally, and are excellent.

WASHING PREPARATIONS. Under this head may be

classed every article sold to take the place of soap. Washing crystals are simply an hydrous carbonate of soda, sometimes rendered caustic by the addition of lime. Washing fluids are generally based on such materials with the addition of ammonia, and borax. The flood of soap-powders; Pearline, Lavine, Soapine, Sudsena, and countless others are prepared from the same bases. Some of the preparations are mixtures of soap, water, and ammonia, merely making an ammoniated soft-soap.

WAX. That most commonly known to grocers is formed by bees, from sugar and constitutes the material of which the cells of the honey comb is composed. The insects work together on a uniform plan and with such celerity that in a new hive a comb twenty inches long by seven or eight inches broad will be constructed in twenty-four hours, and in five or six days the hive will be half-filled. The wax thus produced is more or less yellow in color, and has an odor resembling that of honey. When the wax has served its purpose in the domestic economy of the hive it is collected for manufacturing purposes, by first allowing the honey to drain off or to be pressed out, and then, by repeated boilings and strainings, the product is obtained. For procuring a marketable wax from the combs by a single operation, without either straining or pressing, water and aquafortis in the proportion of one ounce of the latter to every quart of the former, are put into an earthen vessel, much narrower at the bottom than at top. When these are well blended, as many good wax combs are put in as will reach when melted to within a finger's length of the top of the pan. The pan is then set on a clear fire, and the wax is kept stirred while melting, and until it has boiled long enough to liquefy the whole completely. It is then removed from the fire, and allowed to cool gradually. For the greater number of uses to which the substance is applied, it is necessary that the wax should be rendered perfectly white. This is effected by exposing it in thin ribbons on a bleaching-ground, where it is subjected to the action of light, air and moisture, and loses both color and odor.

Myrtle Wax is obtained from a low spreading shrub sometimes

called Candleberry, or Tallow tree. It is a native of the United States, but most plentiful in the South. The berries are about the size of peppercorns and when ripe are covered with a greenish yellow wax, which is collected by boiling them and skimming it off as it floats on the surface of the liquids it is afterwards melted and refined. A bushel of berries will yield from four to five pounds. It is chiefly used for candles, which burn slowly with little smoke and admit an agreeable balsamic odor, but fail to give a brilliant light. An excellent scented fancy soap is made from it. A species of the same shrub is found very plentifully in the moors of Scotland and also at the Cape of Good Hope.

Waxed Paper, is used to wrap butter, lard and cheese, when retailed, and is very convenient and cleanly. It is odorless and tasteless when properly made, and is fast gaining popularity being very cheap and desirable.

WEIGHTS AND MEASURES, Sealers of. These officials are created to protect the public from the risk of fraud on the part of tradesmen, and contrary to all common sense the trade is forced to pay for being watched. The law long ago became a dead letter and it now amounts to little more than a means of collecting fat salaries for several politicians. It should be abolished, and if the trade was well and firmly united it would soon be set aside. We give the fees charged in this State.

FEES, ETC., TO SEALERS OF WEIGHTS AND MEASURES IN PENNSYLVANIA.

These officers are entitled to demand and receive the following fees, to wit: For the trial and balancing of every set of scales, ten cents; of every patent balance, twenty cents; of every set of coal or hay scales, two dollars each; and of every yard measure, six cents; for every bushel measure, twenty cents; for every half-bushel measure, fifteen cents; for every peck and half-peck measure, ten cents; for quarter-peck measure, six and a fourth cents; of every gallon, half-gallon and quart measure, four cents each; of every pint or less, three cents each; of every weight twenty-eight pounds or more, twelve and a half cents; of every weight

less than twenty-eight pounds, four cents each; provided that for the sealing of such beams, scales, weights and measures as have been sealed the previous year, he shall demand and receive only one-half of the afore-mentioned fees.

The fees to be paid for the trial or adjusting of every platform scale which draws five hundred pounds or under shall be one dollar; and an additional sum of ten cents for every one hundred pounds over five hundred pounds, and not exceeding two thousand pounds. Provided always, for the sealing of such scales as have been sealed the previous year, as are or shall be correct, the sealers of weights and measures shall demand only one-half of the aforesaid fees.

APPROXIMATED WEIGHTS AND MEASURES.

16 Ounces to the Pound.

One pound two ounces best Brown Sugar equal about one quart.
 One pound two ounces Indian Meal, equal about one quart.
 One pound Loaf Sugar, broken up, equals about one quart.
 One pound Wheat Flour, equals about one quart.
 One pound one ounce, powdered Sugar, equals about one quart.
 Ten Eggs weigh about one pound.

LIQUID MEASURES.

About sixty drops of any thin liquid, equals a teaspoonful.
 One teaspoonful, equals one drachm.
 Four teaspoonsful, equal one tablespoonful.
 One tablespoonful, equals one-half ounce.
 Eight drachms, equal one ounce.
 Four large tablespoonsful, equal one-half gill.
 An ordinary wine glass, holds one-half gill.
 Four large tablespoonsful, usually fill an ordinary wine glass.
 Eight large tablespoonsful, equal one gill.
 Four ounces, equal one gill.
 An ordinary sized glass, holds one-half pint.

LIQUID MEASURE.

U. S. standard gallon, equals 231 cubic inches.
 One gallon of oil weighs, 9.32 lbs. Avoirdupois.

One gallon of distilled water, weighs 10 lbs.

One gallon of sea water weighs 10.32 lbs.

One gallon proof spirits, weighs 9.08 lbs.

Four gills equal one pint.

Two pints, equal one quart.

Two quarts, equal one-half gallon.

Four quarts, equal one gallon.

31½ gallons, equal one wine barrel.

2 barrels, equal one hogshead.

42 gallons, equal one tierce.

84 gallons, equal one puncheon.

126 gallons, equal one pipe.

252 gallons, equal one tun.

A beer gallon, equals 282 cubic inches.

36 beer gallons, equal one barrel.

APOTHECARIES WEIGHT.

20 grains equal one scruple.		8 drachms equal one ounce.
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3 scruples equal one drachm.		12 ounces equal one pound.
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AVOIRDUPOIS:

16 drachms equal one ounce.

16 ounces equal one pound.

25 pounds equal one quarter.

4 quarters equal one hundred weight.

20 hundred weight equal one ton.

With the exception of the Coal Mines in Penna., the Eastern Fish markets and U. S. Custom House, the practice of allowing 28 pounds to the quarter, which was formerly allowed, is nearly out of date.

BARREL WEIGHTS.

100 lbs. fish, make one quintal.		600 lbs. rice, make one barrel.
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196 lbs. flour, make one barrel.		56 lbs. butter, make one firkin.
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200 lbs. Pork, make one barrel.		84 lbs. butter make one tub.
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LAND AND DISTANCE.

An acre equals 4,840 square yards. An acre is 209 feet long by 209 broad. In measuring Government land, 640 acres or one

square mile makes one section. A mile is 5,280 feet, or 1,760 yards. A league is three miles.

DRY MEASURE.

Half a gallon, equals one-quarter peck. One gallon, equals one-half peck. Two gallons, equal one peck. Four gallons, equal one-half bushel. Eight gallons equal one bushel.

LENGTH.

12 inches, equal one foot. 3 feet equal one yard. 2 yards equal one fathom. $16\frac{1}{2}$ fathoms, equal one rod. 4 rods, equal one chain. 10 chains, equal one furlong. 8 furlongs, equal one mile. 3 miles, equal one league.

SURVEYOR'S MEASURE.

7.92 inches, equal one link. 23 links, equal one rod. 4 rods equal one chain. 10 square chains—160 square rods, equal one acre. 640 acres, equal one square mile.

SQUARE MEASURE.

144 sq. inch, equal one square foot. 9 square feet equal one square yard. $30\frac{1}{4}$ square yards equal one square rod. 40 square rods, equal one rood. 4 roods, equal one acre.

CUBIC MEASURE.

1728 cubic inches, equal one cubic foot. 27 cubic feet, equal one cord (wood). 40 cubic feet, equal one ton (shipping). 2150.43 cubic inches, equal one standard bushel. 26.8 cubic inches, equal one gallon. 1 cubic foot, equals four-fifths of a bushel.

To ascertain the number of bushels in a bin of any dimensions, find the cubic feet by multiplying three dimensions of the bin in feet: Deduct one-fifth and the result is the number of bushels.

LONG MEASURE.

3 barleycorns, equal one inch. 12 inches, equal one foot. 3 feet, equal one yard. $5\frac{1}{2}$ yards, equal one rod. 40 rods, equal one furlong. 8 furlongs, equal one mile.

CLOTH MEASURE.

$2\frac{1}{2}$ inches, equal one nail. 4 nails, equal one quarter. 4 quarters, equal one yard.

MISCELLANEOUS.

3 inches, equal one palm. 4 inches, equal one hand. 6 inches equal one span. 18 inches equal one cubit. 21.8 inches, equal one Bible cubit. $2\frac{1}{2}$ feet, equal one military pace. 3 feet. equal one common pace.

DOMESTIC WEIGHTS AND MEASURES.

Weight of a Cubic Foot.

	lbs.	oz.		lbs.	oz.
Sugar,	100	5	Blood,	65	10
Beeswax,	60	5	Beer,	64	8
Lard,	59	3	Milk,	64	10
Butter,	58	14	Cider,	63	7
Tallow,	58	13	Tar,	63	8
Castile Soap,	56	15	Rain Water,	62	12
Pressed Hay,	25		Linseed Oil,	58	12
Pressed Cotton,	25		Brandy,	57	8
Honey,	90	10	Ice	57	14
Vinegar,	67	8	Alcohol,	49	10

WELSH RAREBIT, often erroneously called Rabbit, is made of dry cheese, melted on buttered toast and seasoned with cayenne pepper.

WHALE OIL. This most valuable and important of all liquid animal oils, is obtained principally from two species of whale—the Sperm Whale and the Right Whale. The former or Cacholot, known also as the spermaceti whale, is said to inhabit nearly all seas and has a wide geographical range, It visits European shores, sometimes enters the Mediterranean and occasionally the coasts of Britain. It varies from 60 to 70 feet in length and will yield from 6000 to 7000 gallons of oil, the finest of which is taken from the great reservoir on the head which is considered superior in quality to others, and classified as sperm oil. The Right Whale, or Greenland Whale, yields however, the largest proportion of whale oil, which is usually designated as train oil. This term is supposed to be a corruption of *drain* from the fact of the oil being drained out of the blubber. The method of procuring the oil may be thus described. After the whale has been harpooned, lanced and killed, it is towed by boats to the ship and

made fast to the ship's chains. The process of *flensing*, or cutting up the blubber is then commenced by some of the crew who, provided with iron spikes in their boots to prevent slipping, descend upon the carcass and cut into the blubber with *blubber spades*, removing the blanket of skin, a broad strip about 30 feet long which is hoisted on to the ship's deck. Huge cubical pieces are then cut out of the blubber of half a ton or a ton weight and also placed on deck, the process being continued until the entire mass of blubber amounting to 20 or 30 tons is removed. In the mean while, others of the crew have explored the whale's mouth and secured the baleen or whalebone. The rest of the carcass is then flung adrift, while the blubber being cut up into small cubical pieces has the cellular tissue separated from it by heating the blubber in a large pot and then straining it, the scraps of one pot serving as fuel for another and so on until the product is finally stored in casks to be brought home and boiled for oil. It is estimated that a ton of blubber will yield 200 gallons of oil, while a single whale will often yield the value of about \$4000 worth of blubber and whalebone.

WHEAT is universally acknowledged to be the most valuable of all cereal grasses, the most popular of all breadstuffs, and next to maize the most productive. Its cultivation dates from the earliest ages, and as in ancient Egypt and Palestine it ranked as a chief crop, so now it may be thus considered in the temperate portion of Europe, Asia and Africa. The wheat districts in this country are of illimitable extent, the vast proportion of which are now covered with virgin soil as yet untouched by the hand of man. So boundless is this tract of country that reasonable calculations suggest the capability of the Mississippi, Missouri, and Ohio valleys alone—if placed under cultivation, to support a population equal to one half of the inhabitants of the globe. Wheat is an annual plant, and although nowhere succeeding better in its growth than in sub tropical regions is a hardy plant, and when covered with snow will endure even the unusually severe winters so often experienced in the north of Europe. It requires, however, for its

successful cultivation a mean temperature, of at least 55° Fahr. for three or four months of the year. Owing to the different climates in which wheat is produced, its cultivated varieties are numerous, more so in fact, than in any other sort of grain. New kinds are continually presenting themselves many of which are held in high estimation in certain districts. The chief varieties are the Bearded and Beardless, which correspond closely with Winter and Summer Wheats, and the White and Red Wheats, which are thus distinguished by the color of the grain. But putting on one side the mere classification of wheat, it is obvious that its intrinsic value depends on the quality of the flour it yields. The best wheat yields from 75 to 80 per cent. of fine flour, the inferior kinds seldom averaging more than 68 per cent. and sometimes only 54-56 per cent. It should be remembered that generally speaking, the smoother and thinner the grain is in skin, the greater is the quantity of fine flour produced. A large portion of the wheat husk is separated from the flour by the miller, and is known as Bran. Wheat is subject to diseases which are frequently productive of serious loss to the farmer and are generally owing to the presence of parasitic fungi, and also to the ravages of different species of insects as the Hessian fly, wheat fly, corn moth, wireworm, &c. Young winter and spring wheats are often infested with the larva of the ground beetle which is very destructive. Of all the preparations of flour that obtained from wheat is far more nutritious than that of barley, oats, or rye. As wheat has ever been the most highly esteemed of all the cereals especially for bread-making, so the progress of agriculture, and really of wealth in many countries is traceable to its increased and extensive cultivation. Irrespective of its importance for domestic-food purposes, wheat has attained a celebrated notoriety in the political and commercial world. In the former, ere to day, it has held the reins of power, has created parties, developed partizanship and decided the issues of parliamentary or congressional strife. In the latter, it has proved an attractive source of speculation and an objective point for financial ambition. It has been the compeer of gold in the race for gain, and has given and removed fortunes in a day.

The principal produce exchanges throughout the civilized world resound with the noisy clamors of "bulls" and "bears," as the fluctuating prices of the grain are clicked by the telegraph and confusedly echoed among the excited throng. Corners have been created and ruin forced almost in the twinkling of an eye by the capricious determination of a favored few who struggle for the sole possession of this precious grain. Thus prices are enhanced and the poor ground down, until, as recently shown in Chicago, this speculative gambling in the chief necessary of life, becomes so enormous and criminal, as very properly to place its votaries within the meshes of the law. Too plain language cannot be used against this pernicious practice and it is devoutly to be hoped that Congress may be impressed to legislate upon the subject.

WHITING is an impure carbonate of calcium, prepared by grinding and then washing chalk so as to separate the coarser particles from the finer ones, which are collected in masses and dried. It is extensively used for size, painting, as a household article for cleaning metals and plate, and medicinally as an antidote in cases of poisoning with mineral acids.

WHITEWASH is slaked quicklime reduced to the consistency of milk by means of water. To make the best white-wash, boil a little starch, salt it well, and pour the mixture into the slaked lime while it is still warm. Then add a few drops of liquid blue, to remove the yellow tint and give it a pure white lustre.

WHOLESALESALE AND JOBBERS. So many dealers style themselves wholesalers and at the same time attempt to supply private families that it is worth while to consider the real meaning of the term "Wholesaler." A wholesale dealer is one who never thinks of dividing a parcel of goods into smaller quantities than the original package, case, or lot, as dealt in by the manufacturers or importers of the trade in which he may be engaged. Dry goods are sold by manufacturers in a "line of cases" to wholesalers who again sell them to jobbers who in turn break the cases and sell single pieces of the goods to retailers. Teas are sold in lines of half chests to Wholesalers who leave it for

the Jobber to break the half chests up in supplying retailers with 25 lb. lots. Many Jobbers call themselves "Wholesalers," while in fact they are nearer retailing if their broken packages and the boxes of assorted trifles which they ship to their customers were considered. It would be greatly to the advantage of the trade if the three lines were kept clear and distinct. The desirability of checking retail sales on the part of Jobbers, who after stocking the retailer up to his very fullest capacity undersell him to his best customers, has long been felt by the trade and wherever Retail Grocers' Associations exist they have acted promptly and effectually in the matter.

WHORTLEBERRY is the fruit of a wild plant usually found in dry, mountainous heaths, is commonly known in England by the name of *bilberry*, and is used in some parts of the world to make an intoxicating liquor. There are several varieties of this prolific fruit known among which those growing on high bushes are usually preferred. The best variety is called the swamp *huckleberry* which yields the largest fruit of a purpleish black, when ripe it is sub-acid, rich and juicy. Another variety called *common* or *high bush berry* is also a large rich berry of a dark blue color. The common low bush blueberry or huckleberry is generally known among the Jersey pickers, as the "cracker-berry" as they crack in the mouth on account of their tough stem. They are smooth, quite black and full of seeds and of a tartish taste. Another better variety of low bush, is known as the *sugar-berry*, being quite sweet, of a blueish coat or like a coat of flour dashed over them and with very small seed. When found in our market they are usually mixed up together and are in season from the 15th day of July to the 20th of September.

WINE is not always found in the grocer's stock, but is a profitable branch of the trade where it is kept in its proper place. If sold only in bottles or by the quantity with no sampling or retailing it leads to a good class of customers who use, but do not abuse the product of the vine and who for that very reason prefer to purchase from the grocer instead of the tavern. Retailing

liquor should not be mixed with retailing groceries although in some sections it is very generally done. In the end it limits the success of the store instead of aiding it. The best and most progressive custom is driven away and that which remains too often ends by owing both the bar and the store equal debts, the store having trusted a little more liberally on account of the bar, and the bar unable to refuse the credit asked lest the whole bill should be lost—as it frequently is.

The term Wine, is usually applied only to the fermented juice of the grape; when other fruits, as currants, raspberries, blackberries, gooseberries, elderberries, etc., are used instead of grapes in making it, the product is generally distinguished as *domestic* or *home-made* wine. The quantity of alcohol is the first element which determines the price of wines, the proportion of which in the stronger wines has been analyzed by Brande as follows :

Wine.	Alcohol per cent.	Wine.	Alcohol per cent.
Tokay	9-15	Bordeaux Claret	13-53
Champagne	11-65	Sherry	17-63
Burgundy	12-20	Madeira	20-31
Hock	13-31	Port	21-75

Wines, however, are not consumed for their alcohol alone; they contain other ingredients which they derive from the grape juice. which give them taste and flavor. Thus, when fermentation of the grape-juice is not complete, a certain quantity of sugar is left, and according to the quantity of sugar left, wines are said to be "sweet" or "dry." While hocks, clarets, and other light wines, contain little or no sugar, port, sherry, and champagne always contain a large amount. In the case of port and sherry this sugar is added during the manufacture, in order to enable them to bear exportation. There are three other qualities in wines which demand some consideration. The first is what is called the *bouquet* and the *flavor*. These terms are sometimes confounded, but they are really different. The variety of flavor is common to all wines, but the bouquet is peculiar to certain wines. The substance which gives flavor to all wines is *cenanthic ether* and is formed

during the fermentation of the grape-juice. The bouquet of wines is formed in the same way by some of the acids found in the grape-juice after fermentation combining with the ethyl of the alcohol, and forming ethers. These are the things which make one wine more pleasant to drink than another, and which give their high prices to the best wines. They are not detectable by any chemical agency; but it is the taste of these *bouquets*, and nothing else, which gives to our wine the value of five dollars a bottle, and to another fifty cents, when all the qualities are precisely the same. The second point in the nature of wines is their *color*. Some wines are what is called "red" and others are "white." Ports, Clarets, Burgundies are all red; also many other wines. The red colors of these wines have been analyzed with some care, but they do not seem to exert any influence upon the system. The most important agent in them is tannic acid, or tannin, which exists in some wines to a very large extent, and which is produced by the skins of the grapes used in mixing the wine. It gives an astringency to red wines which is not found in white. These also come from the skins of the grapes, and the latter is found in dark white wines as well as in red. The other matters which give a character to wines are the *saline compounds*. These substances, which constitute the ashes of all vegetable tissues, exist in a varying quantity in all fruits, and are found dissolved in the juices of fruits; hence we find them remaining in wine after fermentation of the juice. The most abundant of these salts is bi-tartrate of potash (cream of tartar). Besides this, wines contain tartrate of lime, tartrate of alumina, tartrate of iron, chloride of sodium, chloride of potassium, sulphate of potash, and phosphate of alumina. These salts occur in the proportion of from one to four parts in the one thousand of wine. They do not make much difference in the flavor or action of wines; but their presence is one of the surest indications of the genuineness of a wine. Those who manufacture wines with alcohol and water, and add a certain quantity of good wine to give a flavor, do not usually add these mineral constituents, which are always the best

test of a pure wine. The vine is cultivated in great perfection in France; the well-known kinds are Burgundy, Barsac, Pontac, Champagne, Claret, Sauterne, Hermitage, Cote, Rotie, Roussillon, Masden, and Frontignac. The Spanish wines are Amontillado, Sherry, Tent, Malaga, and Mountain, Alba Flora, Maderia, Malmsey, Tinto, Teneriffe or Vidonia. The wines brought from Portugal are Port, Lisbon, white and red, Bucellas, Calcavellas, and Figueira. The German and Rhenish wines are esteemed, particularly Hock, Moselle and Neckar. Hungary produces the celebrated Tokay. Italy furnishes the sweet Lachryma Christi. Sicily exports Marsala or Bronte Madeira. The Cape of Good Hope yields three or four wines, called Cape Madeira, Cape Sherry, Cape Hock and Constantia.

Adulteration of Wines. It requires chemical analysis of so delicate a nature to detect adulterations that they cannot be applied by non-professional persons. M. de Cherville, the French chemist, however, gives the following simple test for deciding whether red wines are, or are not, artificially colored. He directs that, a small quantity of the liquid desired to be tested be poured into a glass and a bit of potash dissolved in it. If no sediment forms, and if the wine assumes a greenish hue, it has not been artificially colored; if a violet sediment forms, the wine has been colored with elder or mulberries; if the sediment is red, it has been colored with beet-root or Pernambuco wood; if violet-red, with logwood; if yellow, with poke berries; if violet-blue, with privet berries; and if pale violet, with sun flower. Air in the cask or bottle, taking the place of alcohol and water lost by evaporation is fatal. Hence casks must be filled from other casks as rapidly as evaporation or leakage leaves any unfilled space. The leakage of a voyage is often fatal. The temperature of the place where wine is stored should be as even and as near an average of 50 degrees Fahrenheit as possible. The upper rooms of ordinary dwelling houses are safer than the generality of cellars. Frost is fatal, except to strong wines, so is excessive heat, even that of exposed positions in summer. Bottles should always be

laid flat with their labels up so that in handling them one may know where the deposit is and disturb it as little as possible. The length of time which wines may be advantageously kept, depends mainly upon their strength. Considering this in each instance, it may be roughly stated for clarets and the light white wines, from three to ten years; for Burgundies and the heavier wines from five to thirty years; for Port, Madeira, and Sherry, an almost indefinite period.

WINTERGREEN. The leaves have been employed as a tea substitute, and an oil is distilled from them which is used in perfumery.

YAM. A climbing plant, with large tuberous roots, forming one of the bread stuffs of the West Indies and other tropical regions. The roots are very rich in nutritive fecula, and they are much used as articles of diet.

YEAST. The substance commonly known as yeast, is in reality a plant, belonging to the tribe of *Fungi*, it consists of a multitude of minute oval or circular bodies, endowed under favorable circumstances with extraordinary powers of growth and multiplication. During the process of fermentation of saccharine fluids containing albuminous matter, as in brewing or wine-making, the originally clear fluid becomes turbid, the carbonic acid is evolved and the substance gradually separates in the light brown or fawn colored frothy consistence known as yeast. Ale yeast is best and strongest, Beer yeast is weak, but very rapid in its effect. (See *Compressed Yeast*.)

The vitality of dry yeast is destroyed by falls, blows, bruises or rough mechanical injuries; also by heat, cold and chemical reagents. The presence of yeast in a substance containing sugar, or starch convertible into sugar and nitrogenized matter, induces certain chemical changes, comprehended under the term vinous or alcoholic fermentation. These changes in the making of bread consist in the conversion of sugar or flour into alcohol and carbonic acid gas; the latter, in its efforts to escape from the dough with which it is mixed, distends it, forming vesicular spaces in its interior, and so causing it to become porous and light.

SUGAR AT COST,
AND
OTHER ARTICLES
SELECTED FROM
THE PHILADELPHIA GROCER.



(PUBLISHED WEEKLY—SUBSCRIPTION, \$2 00 PER YEAR.)



SHALL SUGAR BE SOLD AT A PROFIT.

The following articles present one topic only, but one which is of vital importance to the trade. We give them as a sample of our Editorials relating to Selling Sugar at Cost. All other topics of interest to Grocers find active discussion in the PHILADELPHIA GROCER, and if these articles are found acceptable a copy of our paper can be secured every week in the year, post-paid, by sending two dollars to

**THE PHILADELPHIA GROCER,
201 SOUTH FRONT STREET,
PHILADELPHIA.**

THE HISTORY OF A BARREL OF SUGAR.

There was a time when I was happy, said the ghost of a barrel of sugar, now rattling among the empty staves which it had once so snugly occupied. There was a time when I was full of life and activity. I was born under a tropical sun and nursed on the warm soil of Cuba by a multitude of cheap Chinese laborers. I flowed freely through the veins of gigantic sugar canes and little dreamed of the future that lay before me. One day the overseer said that I was now full grown, and that I must go traveling. The Senor's son had gone to the United States to be educated, and I felt rather glad that I was going also. So they cut the canes down and squeezed me out by the hardest of crushing and grinding until I felt as though a new life would be necessary to take

the place of the old one, and so it was ; for now I flowed in a darker and thicker mass, and although I missed the waving leaves and the morning light of my childhood's fields, I flattered myself that my mission was begun and that I was now more substantial to say the least.

I was packed into a hogshead and made awfully sea sick by the voyage. I foamed over the vents of the cask, and felt as though I should certainly burst my insides out before we reached port. At last we got to Philadelphia, and the cask which I occupied was swung ashore in front of one of the greatest public buildings I ever saw.

In Cuba the houses were never more than two stories high, and here was a great brick building ten stories high. I thought it was one of the famous colleges, and wondered whether Pedro had gone there. Over the top stood the initials "H. H. & Co.," which I found to mean Harrison, Havemeyer & Co. I also found very promptly that while it was not a college it was a very refining school, for they sent me up to the tenth story on a steam elevator, and before I could protest they poured me into a tank and I went boiling and steaming and whirling through sieves and cauldrons, around great whirling pans, and down from one story to another until at last I lost all my vitality and came out crystallized through fright and half bleached with terror. Nor was this enough, to finish me completely they packed me into a pointed mould, and put a poultice over my head made out of clay and forced hot syrup through me. Every vestige of color and of my old life now left me, and when they took me out I was as hard as Pharaoh's heart and as white as a tombstone. They then put me under a crusher and ground me up, and almost lifeless I was packed into a barrel, where they put a sheet of blue paper over me and shut me in.

I thought I had seen misery enough, but, alas, more was yet to come. I was trundled in jolting drays all over the city ; was handled first by a great wholesale grocery house, and then sold to a smaller one. After that a retailer bought me, taking out the

head of the barrel and tearing off the blue paper, cried angrily: "Confound it! 'A' sugar, ten and half and fine at that. Here, boys, to-morrow's Saturday. Pack this sugar in one and two pound bags. Come now, jump around lively. Do you think there's a thousand dollars profit in one barrel of sugar that you can waste time on it. John, cut that string close, it all counts, and the PHILADELPHIA GROCER is right in saying that it is a loss any way you work it. Don't waste a grain of that sugar, weigh it close, every grain tells in the cost." And so he scolded and drove the clerks until about an hour afterwards he asked; "How much do you make?" "Two hundred and eighty-seven pounds." "There it is again, he cried, turning over the head, "Net weight 290 pounds, and three pounds gone already. That's over one per cent. to begin on." And he flung my barrel so angrily down the cellar that he stove it in. "There goes ten cents off that barrel," said the errand boy. "It's all loss," muttered the grocer, "though I ought not to have got mad; but it is enough to make a saint swear to sell sugar these times, and have to advance one week and drop the next, and advance the next, and make no money but get lots of abuse. Just here a thin woman stepped in with a shawl thrown over her head, and the grocer flung his sour looks behind the pile of sugar bags, and put on a smile. "Well, Mrs. Jones, what can we do for you?" How much's your sugar?" she asked, glibly. "Sure loss," he said, to himself. "Eleven cents, Mrs. Jones, two pounds for twenty-one." "Mercy on us!" she cried, "ten cents yesterday and eleven to-day?" "No ma'am, ten and a half cents if you take two pounds." "Yes, that's it. Take a barrel and get it at cost, I suppose," she replied with a toss of her head. Now I knew that the grocer paid ten and a half for me at the wholesalers. "Indeed, madam," said the grocer, "it cost me that." "Well if I must I must—give me two pounds. I can't pay eleven cents for sugar." So he gave it to her, and when she said she would pay for it the next Saturday, he looked as blue as the paper he tore off the top of the barrel. "Anything else to-day?" "I guess not," she answered,

testily, "your prices have gone up too much since yesterday," and she flounced out of the store. "I doubt if I will ever get my old bill out of that woman," murmured the grocer, and turned to wait on the next customer.

One after another they quarreled, and said sharp things about me, and I got more curses and complaints than a few while I was being distributed in one and two pound papers around the city. I concluded that I was one of the greatest evils of the day, and certainly the most unprofitable creature under the sun. When night came the grocer said that his sales during the day had been sixty dollars, and that after counting off the sugar only thirty dollars worth of profitable goods remained, and he gave the barrel another kick as he shut the store, and completed its ruin. And now I wander about the cellar a ghost of a barrel of sugar. I think I was once capable of doing well by that grocer, but he degraded me into a "leading article," and threw me out as a bait to his customers and only got their ill will in return, and made me a miserable drag on his business, and at last a ghost, which will haunt his store until justice is done to my kindred in his counter sales.

THE GROCER'S CATECHISM.

Q. What is the chief article in a grocer's stock?

A. Sugar, in its various grades.

Q. What rule has governed the trade in its sales of sugar for many years?

A. That it should sacrifice all profit on it, to the destruction of the seller, without comparative advantage to the buyer.

Q. How came this original sin into the trade?

A. It arose from ill judged competition.

Q. Is there any hope for those who sell goods without profit?

A. None in this world and very little in the next.

Q. Wherein lies the greatest difficulty of this sin?

A. In that it obliges the grocer to charge double profits on one half his stock in order to cover the profitless half, and thereby

puts him in a false position before the world and his customers.

Q. What articles represent the extremes of the grocer's stock?

A. Sugar, by reason of its profitless nature, and Tea, by reason of the nature of its profit.

Q. Does the customer appreciate the saving he makes on his purchases of sugar?

A. He rarely does, and as a general rule takes two pounds of sugar at 13c. for a quarter, without a suspicion that the grocer loses on it.

Q. How does the customer regard the profit which the grocer makes on teas?

A. He thinks it exorbitant, and in many cases is so impressed with the fact that he starts a tea store, shrewdly intending to sell only the profitable line of groceries.

Q. What articles go to swell the loss on sales of sugars?

A. Time, interest, twine, paper bags, the turn of the scale, loss in weight from drying out, cartage, &c.

Q. Are these items often taken into consideration?

A. Very rarely, except by moralizing scribes who write for the grocery press and try to advance reforms.

Q. Are there any means of grace other than these scribes which are likely to bring about these reforms?

A. Yes; both the establishment of retail stores which, by dealing only in profitable goods, leaving sugars to those who are foolish enough to sell them at a loss, can sell fine groceries at lower profits; and the rapid growth of grocers' sundry houses in the wholesale trade who, by keeping no sugars, grow so rich that their neighbors are tempted to go and do likewise.

Q. What would be gained by putting a profit of ten per cent. on sugar?

A. There would be room to cover the constant fluctuations of the market and the margins of profits could be more justly equalized by taking 10 per cent. off the profits on other articles.

Q. How would both dealer and customer profit by this change?

A. The dealer would see more clearly how his daily profits accrued, and would not tempt competition by asking huge profits on certain articles which are really offset by the losses on sugar, while he would stand in a better light before his customer who would not be so ready to believe that sand, glucose, terra alba, and water were the means employed to secure the profit on sugars, which all customers are sure he must make "by hook or by crook." The customer in turn would find more satisfaction in a lighter price on tea (where the discount would show to advantage) and might in time learn that after enduring a ten cent advance on a pound of butter without a groan he could still live if sugar went up an honest penny.

Q. Does the system now in vogue tend to demoralize the trade?

A. It does, in that the wholesaler sells sugars at cost in order to push cheap teas at high prices; in that the retailer buys some cheap teas in small lots at large figures in order to tempt the salesman or the wholesaler to put in some sugars on credit; in that the customer buys his teas at the tea-store, and his sugars from the regular store, and thus lights the grocer's candle at both ends; and in that it is unjust to make the sugar trade bear half the risk of the grocery trade without a margin of profit whereby to insure it against loss, while the tea trade has less than one-quarter of the risk, with the insurance of an extravagant margin.

—Sell vegetables, fruit and other perishable goods at smaller margins and get a profit on sugar. It is much fairer to the poor customer.

—Take part of the profit off tea and coffee and put half as much on sugars as you have taken off, and the customer will be benefited and show his appreciation in increased trade.

—If the price of sugar is marked below the price paid, a certain loss stares the dealer in the face. It is no less certain a loss if bought and sold at the same figure

—"It is an advertisement and draws other trade to sell sugar

at cost." Correct! But can a merchant afford to pay such large advertising bills? No; get 10 per cent. on sugar, or even 5 per cent., and half or quarter the difference spent judiciously in advertising will bring more trade.

—There is no such thing as selling sugar at cost—it is not possible. If sold at the price paid for it, and it is weighed out in parcels, the money cannot be got back. Remember paper, string, and the turn of the scale all count. Sugar will dry out and waste.

—It would pay better in most cases to sell some other goods for cost and get 10 per cent. profit on sugar.

· A CONDENSED CHAPTER ON SUGAR.

We are perhaps possessed of a devil—the devil of unrest—but we propose to indulge in continued activity on the subject of sugar sales and the nonsense of losing money on them until we wear out a gross of the free sample pens which Esterbrook is distributing, or hail the coming in of a better system of doing business. Wisdom has cried in the streets about this matter until her voice is all gone, and the Solomons count it as vanity to say more; but it will not down, it is truth, and however much crushed to earth it will certainly rise again. How often it rises as a ghost at a meeting of creditors, or how frequently it skulks in at a grocer's death-bed, to whisper in his ear that his children are left without substance, we leave for other statisticians. Yet, if a moral must be had for our story, we shall not stop for live grocers, or dead grocers, but force all lines of argument into our service and fight it out like Grant, if it takes a whole presidential term to get our object.

In our issue of last week we scattered out ideas over the whole paper like pepper and bird shot. This week we condense them into a slug. But stop!—if you read further you are a fool—a self-convicted fool. Better lay the paper down than to read your own folly written in black and white before your open eyes. And then think of your parents and your grand parents (if they were

in the trade) surely you will not wish to blacken their memories even though their sins are tumbling down on the heads of the third and fourth generation in the shape of customs of the trade. No, let the matter rest, and go on with your eyes shut and your ideas asleep rather than testify to the truth against yourself and your forefathers.

But if you do read, you cannot escape conviction of your sins and you had best reform quickly and try to hasten a revival among your neighbors in the trade by sending them down to our office to subscribe at once.

Nearly half your purchases in value are sugars. The refiner says he lives on the simple interest on the investment he has made. Now, do you get interest on that half of your stock? The jobber takes care to secure at least one-eighth cent per pound on his sugars in original packages; do you get this margin on your counter sales? When sugars advance the jobber ten times out of a possible nine gets his eighth and the amount of the advance on all the sugars he holds. Do you secure any such margin on an advancing market? The wholesaler sells you the sugar in a barrel which he gets without extra charge, and for which you get about 20 cents; how much do you pay for one pound bags and twine? The jobber charges hauling on your sugars, as he ought to do. Do you follow his example and charge your customer for time, trouble and loss in putting up these profitless goods? On Front Street or Water Street the scale turns once. How often does it turn on your counter?

Even in such a paper as ours jobbers and manufacturers are very close about their advertising expenditure. Do you think you can afford to sell half your stock at cost because it is an advertisement? Your wholesaler hates to sell you sugars on credit because his margin at one-eighth is so close. Can you afford to credit your customer when nearly one-half his purchases show you no profit? (Don't say you don't trust your goods out; die honest if you are struck dumb in the effort. We know you only trust So and So, your relatives, &c., &c). You rejoice in a good margin on small

fruits. Do you feel half so happy when the customer adds 10 cents worth of sugar to his 10 cents worth of grapes, and reduces your percentage as much below one-half your first ideas as the price of the sugar runs below its cost.

You ask a wider profit on fruits because they are perishable, do you realize how many pounds of sugar perish when it dries out? Your customer puts your tea and coffee into the same cup with your sugar—why should you make fish of one and flesh of the other—get a profit on this and not on that? Does the mixture of your wide margins on the tea (which he is ever angry at) and your comparatively more disastrous loss on the sugar (which he says is compensated for by sand, terra alba, and water) improve the flavor of the infusion?

But we are making merry at your expense when in reality it is a most serious subject; one in which your solvency may be closely concerned, to say nothing of your personal contentment and the future support of your family. Do you look at it aright? Are you ready to remedy it? Look back over your experience; calculate how much sugar, you have lost—string, paper, and sugar altogether; read our list of questions again as if it were your catechism, and then if you can stand the loss of interest, the absence of profit, the nonparticipation in an advance, the paper, the time, the turn of the scale, the extravagance of using it as an advertisement, the credits without margin and the waste in weight—if you can stand all these items—well, we can also.

—The jobber gets one-eighth to one-quarter cent per pound profit on sugar, generally, and when the market advances he gets the profit and the advance. The retailer sells at cost and can in most cases get no benefit from the advance in the market.

—In a large retail business it takes nearly the whole time of one clerk to weigh out that profitless staple—sugar.

—Most jobbers would be well pleased if all retailers would buy their sugars direct from the refinery, as it does not pay them, even at a profit of $\frac{1}{8}$ and $\frac{1}{4}$ cent. Why then should they trust their

goods to men whom they know will sell sugars and other staples at cost or less.

—The imports of sugar into the United States during the past thirty years far exceeded the value of all the gold dug out of our mines in the same time. All this sugar passed profitlessly through the hands of the long-suffering grocery trade, and still they are not prepared for a change in the system.

—We feel interested in the sugar question. Without the aid of the trade all our interest will begin and end in theory. What we desire is that those who agree with us will stand up and say so, plainly; that will keep the ball in motion, and if it results in action we are ready to advocate that action much more forcibly than we have advocated the theory. We decline to believe that the trade has lived under the burden of this mistaken course so long that it is now irreparable, or that retail grocers as a class are not ready to adopt a better mode of doing business in the future. The world moves, and what was impossible years ago, is possible to-day. General discussion of this subject will start the reform, general acknowledgment of its desirability will keep it moving, and finally, general association to execute it will accomplish its ultimate success.

—The old conundrum about the pig of lead and the price of the hog comes to us as follows: If a grocer loses two cents on a dollar's worth of sugar, how much must he make on a box of raisins.

—How much sugar do you sell for the Holiday feasts? And then how much do you lose on it? These are pertinent questions, and we hope you will weigh them as carefully as you do the sugar.

—The fathers ate sour grapes and the children's teeth are set on edge, for the inheritance of selling sugar at cost was not originated by this generation. Can it not be cured before another?

—Sugar always meets with large demand for consumption however the market may stand, and the main effort of the retailer

should be to secure at least a moderate profit on his sales of it.

—The trade is very sensitive about advances in sugar, because it requires so much capital to carry this profitless article, but a steady price is much more desirable than a low one, and the strongest efforts of the trade should be made to establish a regular price and a moderate but fixed profit.

SOME SUGAR PLUMS FOR CHRISTMAS.

The holiday season is close upon us. Thanksgiving Day gives the first signal for good cheer, and Christmas and New Year come rapidly after, with increasing intensity in their glee and their good things. The trade must prepare in earnest; the largest outlays of the year must be met; the clerks must be more active; the store must put on its best appearance; the stocks must be fresh and of the best, and as the children return from boarding schools, and kind uncles and aunts generously dispense small change to amateur cooks and candy makers, and because the main mode of observance of these days of good cheer consists of cakes, candies, pies and pastries, puddings and punches, a special demand for sugar must be expected, and the retailer must lay in an extra stock. Now, just here is where the trade gets its customary sugar plum for the holidays. Sugar goes up some seasons one cent per pound, and that means that 10 per ct. more capital is required to carry the stock. The Christmas season comes and during its continuance an increased stock is required, and that means still more capital or an extra strain on the credit. Customers come in radiant with good will and order raisins and spices, and citron, and the grocer smiles also until the half dollars' worth of sundries is knocked down by "and ten pounds of granulated sugar." If he stops to think he must realize that on fifty cents he made seven and a half cents, on the sugar dollar he made nothing (except a loss), and that on the total \$1.50 he has made only seven and a half cents, or just five per cent. on his money. If he does *not* stop to think he warms his heart over the profitable side of the transaction and conveniently drops the other side out of his mind.

Now, before this sugar season comes upon the trade we want to dwell on its importance, not as a season of rejoicing, but as a season of sober thought. In all matters of profit or of taxation the rule has ever been that articles of luxury are the ones upon which to add the profit or the tax. This season shows us the exact reverse, for one half the sugar sold goes to make luxurious toothaches, headaches and stomach aches in the shape of sweet things ranging from the children's cakes to the egg-nog of the parents. It is a season of most general extravagance, and families who ordinarily buy sugar by the pound will take five pounds at a time. *Don't put the price up this season*, because the harvest is not ripe; but think as you weigh it out, think as you tie it up, think as you enter it in your books, and think of it until you collect the account—perhaps you will be prepared to unite with the whole trade on another basis before another Christmas comes around. We propose to agitate the question thoroughly, and if the grocers rally around us we will finally secure the desired change. Nothing is more desirable than a certain, even profit on the goods a dealer sells. We grant that in a grocer's stock some variation will always exist, but we still hold that to start from a loss on sugars to doubled money on some trifling articles is too great a range for reasonable business. The novices in the trade are always in the clouds over the doubled money, and the established dealers are depressed to the nether regions over the low average on the entire sales, and very few veterans survive the system to live comfortably in old age. *If the existing trade does not reform another trade will spring up and render it unnecessary.* Co-operative stores will take the field here as they have done in England, and their main ground of competition will be on their refusal to touch sugars.

—The jobber proposes at least to get interest out of his investment in sugar. The retailer sacrifices interest on nearly half the investment in his year's purchases.

—If five hundred reliable dealers will begin July 1st, 1881, to add one cent per pound to the price of their sugars how long would it take the balance of the trade to follow suit.

—When food gets scarce in the West the saying of "Root hog, or die," has peculiar force. Profits are now cut close by inside competition and are further threatened by the prospect of co-operative stores. Why not start a cry of "A profit on sugars or quit."

—The trade is threatened with co-operative stores; *they* will not sell sugar at cost. The civil-service and other co-operative supply stores in England are wise enough to avoid that error.

—Sugar is an article which enjoys a general and fair demand at all times. The price has of course some effect upon it, but whether the fluctuations of price are not mainly borne by the retailer and not by the wholesaler or his customer is a question of considerable importance to the trade. A permanent advance falls of course on the customer, but slight fluctuations are too often borne by the retail dealer who fears that if he advances too quickly his neighbors will not go with him and his custom will be drawn away, and yet when the market declines he drops at once. The wholesaler is generally wiser than the retailer.

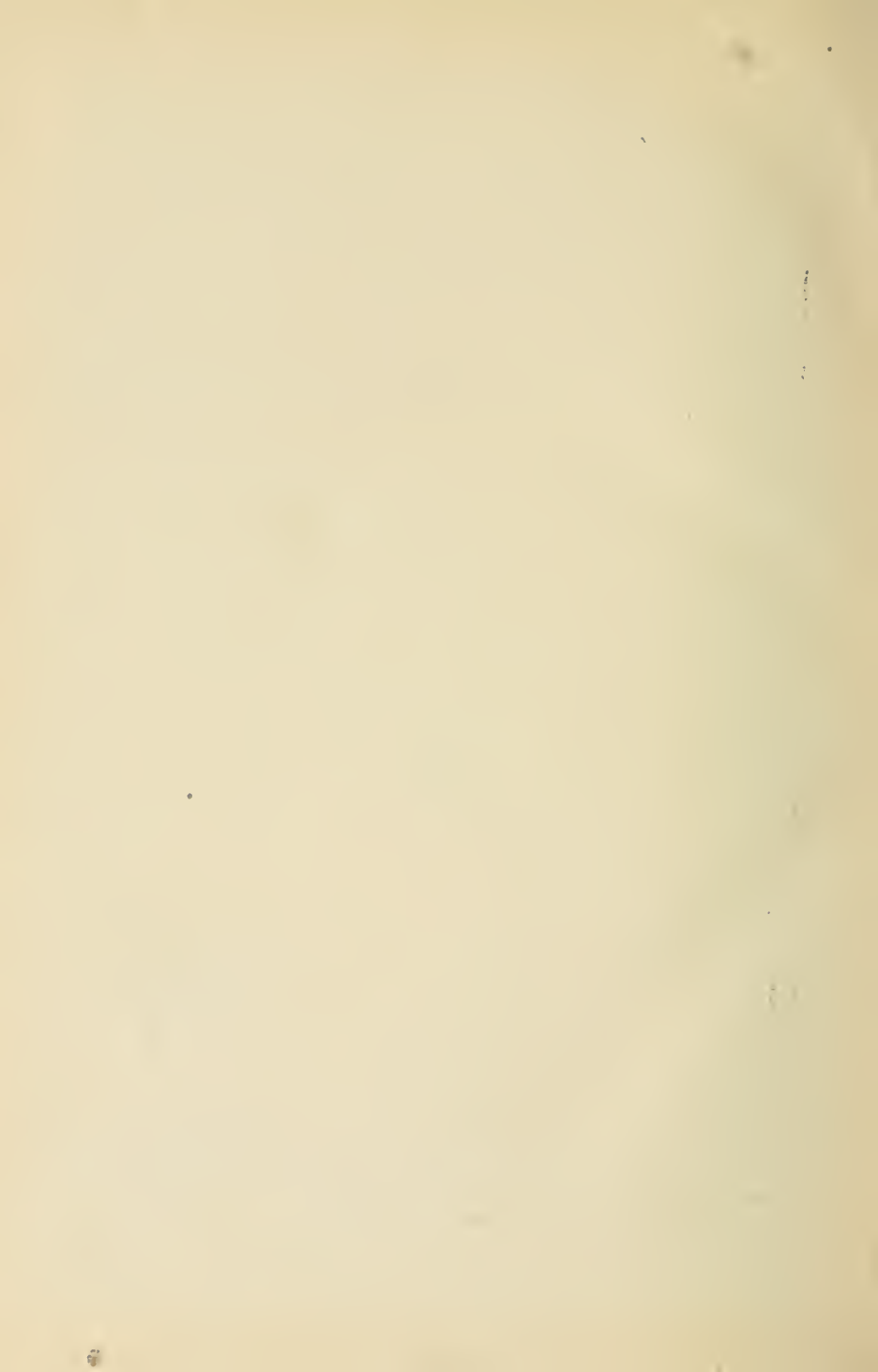
—An average family consumes half as much butter as sugar. Now, if the farmer and the market man advance butter ten cents per pound the addition to the cost of the family living is precisely the same as if the grocer added five cents per pound to the sugar. Tell your customer this and prepare his mind to pay a profit on the sugars he buys.

—We are crystallizing our sugar theories into rock candy for the holidays. We are *not* the first to commence the agitation of the subject. Probably it was protested against before we were born, for the error is now moss-grown in its folly. The first active protest of the grocery press came from the *New England Grocer*. We are like St. Paul, "born out of time," but we do not intend to be the last in the race by a good many yards.

“WHAT IS A GROCER, PAPA?”

“What is a grocer, papa?” “What is a grocer, child? Why he is a good natured man who deals in the actual necessities of life at the corner and is too humble to believe for a minute that he has any rights. He solicits trade by marking all his goods down to cost, and when the consumer don't pay promptly, he waits. Yes my child, some grocers stand and wait until the undertaker gets his bill in, and then they lean over the graveyard fence and wonder how to get their money. Yes, the grocer has heard that story about the little worm of which your mother tells you, and he gets up ahead of the worm, and ahead of the birds, and often has to wake the watchman who is leaning against his front door before he can open it. But then, my child, if he does open early he shuts very late to make up for it. Yes, he is the man that lives by selling sugar, and he makes so much money on it that he is expected to give lumps of it to all the children, and to give their mothers a good heavy turn of the scale when he weighs it out. A grocer is sometimes called a cutter, but it is not because he cuts meats, my dear, it's because he cuts prices. If you cut a quarter of an inch off your nose every morning you'll soon reach your face, and that's what's the matter with the grocer, my child. He makes a clear fortune on sugar, but before he goes to bed he plays a game of cards in which they 'cut,' and he loses all his money. Does he gamble, my child? Oh, no, but he does something very much like it. He takes the public for fools, and first they cut, then he cuts he deals, they *always* win, and he—loses his money. It does sound like gambling, my child, and some of the men from whom he buys his stock think it is worse. Oh, yes, the grocer is a pious man, he rarely swears except when he sells eighteen pounds of raisins out of a twenty-five pound box and finds it empty, or

when he weighs out a barrel of granulated sugar and it lacks just six pounds, *or* when a barrel of coal oil guages three gallons short, *or* when he hears Mrs. Never-pay say 'charge it,' *or* when the summer is so hot that he loses a dozen good cheese, *or* when the winter is so cold that his potatoes freeze, *OR* when one of his customers say 'we buy our teas at a wholesale house on Front St., *OR* when the Sealer of Weights and Measures takes charge of his store and declares martial law, *OR*—but your mother is calling you, good-night child, I'll tell you the rest about the grocer some other time."









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The Grocers' hand-book and
directory

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& Medical
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